THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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Soiling, or House-feeding.

We have from time to time drawn liberally from the various No's. of Colman's Tour. In the Cabinet for Tenth month last, we gave an extract on the above subject, and now offer to our readers, or such of them as do not take the work, still further remarks and statements in relation to it. From some cause or another, soiling has not succeeded, or been adopted permanently, to much extent in this vicinity: and no doubt there are sufficient reasons why it has not been. We are entirely of the mind that it should not be lost sight of, or be looked upon as entirely abandoned. Every farmer must judge for himself, and form his conclusions or adopt a practice accordingly. The editor does not doubt but there may be situations and circumstances that would with judicious management, render the plan highly advantageous.

There is an expression in the following extract that we must ask leave to repeat here. "*The moving spring of every farmer's success is his manure heap.*"—ED.

I HAVE seen several instances of soiling in this country; but with the exception of large milk establishments in the towns, and one or two large farms in the country, they have been upon rather a restricted scale. I have said that horses are almost universally soiled; the same may be said of much of the fat stock, which is in preparation for an early market, and especially for the agricultural shows. Fatting sheep in England, are generally folded, and in most cases the feed is cut or pulled for them, and they are fed from mangers or troughs. Other stock is generally grazed, as with us. Indeed, in parts of the country, especially in Scotland and Ireland, there is a large portion of the country which does not admit of, or would not pay the expense of cultivation, and this is devoted to grazing, as the only beneficial use to which it can be applied.

I am bound to say that soiling is not universally approved. Mr. Stephens, the eminent author of the Book of the Farm, says that he has tried twice the experiment of soiling his horses, but failed in both cases; at one time for want of cutting grass, the second cutting having entirely failed that year; and the other time, for want of straw for litter, until the arrival of the new crop. The latter reason seems to me about as appropriate and valid an objection against soiling, as it would be to have said that his experiment of soiling failed because he had no stalls in which to tie his cattle, and no troughs from which to feed them. Litter is indispensable in order to reap from soiling all the advantages which it may afford in the production of manure; but it is difficult

to understand with what propriety it can be objected to the practice of soiling, that it fails, when that failure is not in any way the fault of the system, but grows out of the deficiency or neglect of him who makes the experiment. The former objection has a good deal of force; and it would be great imprudence or improvidence to undertake a system of soiling without an ample preparation against such contingencies.

It does not come within my province, in this case, to detail what has been done in the United States in the way of soiling. The experiments of Josiah Quincy, Esq., on his estate in Quincy, Mass., made with great intelligence and acuteness, are detailed most fully in the Reports of the Massachusetts Agricultural Society. I have in other publications referred to a dairy of Robert Smith, Esq., near Baltimore, where a hundred milch cows were soiled. Another similar establishment I have visited on Long Island, N. Y., where an equal or larger number of cows are soiled. I have likewise, in former reports, mentioned the admirable experiment of a small farmer in Waltham, Mass., who, from three cows carefully soiled, and allowed to recreate themselves for two hours a day in the barnyard, produced at the rate of thirty pounds of butter per week, for three months. But I will refer to some cases which have come under my observation here, always finding occasion to regret the extreme difficulty of obtaining from farmers in general very exact accounts of any of their farming operations.

I shall give first the experience of Mr. Skilling, the intelligent and skilful manager of the school farm at Glasnevin, near Dublin.

At first he was a country schoolmaster, having the management of four and a half acres of land. "When I adopted the house-feeding system," he says, "my neighbours laughed at me, and predicted that my cattle would die; others said the cattle would give no milk. I lived near a village, through which I led my cows twice a day to water. They had a good appearance, as they were well fed; and they ran through the village wild and full of spirit. This showed they were in no danger of *dying;* and when they saw—for I was closely watched—firkin after firkin of butter going to market, they began to think there could be no great deficiency in the milk. I fed them on mangel-wurzel and turnips; and when other cows were dry, mine were giving milk. During three years I kept three cows, and sold £6 worth of butter each year from each cow, besides having a sufficiency for a family of six persons."

When I visited Mr. Skilling's well managed establishment, he was then soiling sixteen cows in clean, well ventilated, and convenient stables. He states that these cows, upon an average, give him £15 10s. a year, each, and this principally from the sale of the milk. He estimates "that a cow fed in the house will make twenty-five tons of manure, which will be sufficient for an acre of ground." I am afraid in this case my friend overrates the quantity. He says he can, "on an average, keep a cow on every two English acres of land." I believe that, with proper pains and cultivation, a cow may be kept upon less than two acres. I have known a cow very well kept upon one acre through the year, and a portion of hay annually sold from the same ground. "Such," he adds, "are the advantages of house-feeding. There may be difficulties in keeping cattle in houses; but people should have patience, and not let difficulties overcome them. The advantages that arise from house-feeding are a larger quantity of manure and much more milk; and such being the case, it would appear strange that men should continue to practise the old plan. The system is applicable to a large farm, as well as to a small one. In England the farmers do not keep half a sufficient stock upon their farms. They keep a great number of sheep, but not sufficient to compensate for the short stock of cattle. But it may be objected that, on a very large farm, say 1000 acres, it is difficult to erect a cow-house sufficiently large to accommodate as many cattle as would be necessary. The difficulty can be easily obviated. Let a number of cottages be erected on the farm; and beside them let cow-houses be built, so that the persons residing in the cottages can take care of the cattle in the houses next to their own. Let the young cattle be in one house; the milch cattle in another; the fat cattle in another; and it will be found, at once, that the system is as applicable to a large farm as to a small one." Mr. Skilling, it will be seen from these statements, is of a sanguine temperament; but the observations of a man so experienced as he, are entitled certainly to a respectful hearing.

He goes on to say, "The house itself must be airy, well ventilated, and perfectly clean. The animals must be well curried and brushed every day." His stables and their occupants gave ample evidence that he practised what he preached. "There ought to be one particular person to superintend and pay attention to the feeding; and one of the most important parts of his duty is, to ascertain the appetite of every beast. Cows, like other animals, will eat less or more; and they ought to be supplied according as

they require it, being kept rather with an appetite, than otherwise. As soon as the animal has eaten its food, all refuse should be immediately taken away, and nothing suffered to remain in the stalls before it. The cattle will know the hour of feeding as correctly as the clock tells it, and will be disappointed and fretted if neglected. This neglect is prejudicial both to milking and fattening. Every farmer who cultivates his land in a proper manner, will have plenty of food for his cows in the house, summer and winter, and of various kinds. Cows, like other animals, are capricious in their appetites; they will not agree with being constantly confined to the same kind of food. No matter how nutritious in itself, there ought to be a variety; a change, if possible, for every feed." This is the mode of feeding which, he says, he himself has found eligible. "I give six feeds in the day, summer and winter, beginning at 6 o'clock in the morning, and ending at 9 in the evening, viz., at 6, at 8, at 12, at 3, at 6, at 9. They get water in their stalls at 10 in the morning, and at 5 in the afternoon; they are likewise turned out one hour, from 10 to 11, where they exercise, and drink if they choose. The kinds of food I use chiefly are the following: In summer, at 6, I feed with perennial or Italian rye grass and clover; at 8, with cabbages or leaves; at 12, with cut hay and straw; [this feed is to prevent the action of too much green feed upon them; a cow in health ought never to be purging; if she is, both milk and flesh are running off;] at 3, upon vetches; at 6, upon mangel-wurzel leaves, rape, cleanings of ditches, or other refuse of the farm or garden; at 9, clover or grass, or this may again be dried feed, if the state of the bowels requires it. In winter, at 6, first feed with steamed food; at 8, with turnips, raw; at 12, with cut hay and straw; at 3, with mangel-wurzel raw; at 6, with steamed food; at 9, with hay and straw. Water must be given or offered, and plenty of salt used in the steamed food. This mode, after much experience, I have found highly advantageous for all my cattle." He adds, "I have ascertained that when my present farm was in pasture, it pastured eighteen cows in summer; but now it feeds sixteen cows and three horses, all the year round, and I have as large a proportion of grain crops on the same land as most other people, besides."

I have thought that these details, all of which came under my own observation, would be interesting to my readers; and I will refer to some experiments on a small scale, on the estate of Lord Gosford, in the county of Armagh, Ireland, already spoken of, under the management of William Blacker, Esq., who may be considered as the author of house-feeding in Ireland.

I had the gratification of a most instructive visit with this gentleman, among several of his small tenants, who everywhere greeted him with a warmth of welcome which showed their deep sense of his kindness. Indeed, many of them, through his judicious and beneficent agency, had been recovered from a condition of want, discouragement, suffering, and debt, and placed in circumstances of independence, comfort, contentment, and improvement; and I know not who are more to be envied than those persons who have it in their power to confer such benefactions, and who are permitted to see the beneficent fruit of their labours.

I shall be excused if I interrupt the course of my subject to speak of the means by which these changes, which here meet the eye and warm the heart, and form such an affecting contrast to the indescribably wretched condition of many of the cottiers of Ireland, have been brought about.

The numerous tenantry among whom he was placed, and a large proportion of whom were the occupiers of very small holdings, laboured under two great difficulties,—ignorance of the best mode, and the want of the means, of cultivating their grounds,—difficulties which press heavily upon a great portion of the Irish population. The best of all charities is that which helps the unfortunate to help themselves. To understand the condition of Ireland,—unlike, it is said, that which exists in any other part of the civilized world,—it is necessary to go into Ireland. My eye never before rested upon, my imagination could scarcely exaggerate, the state of destitution and degradation, as far as their condition was concerned, in which I saw millions of these people living. The whole blame of this condition is not to be charged, as is too often done, upon the landlords. If, as is well known, there are too many landlords who neglect, there are those who seek to perform, their duty, and to discharge their high responsibilities, and who, actuated by an ardent spirit of philanthropy, are sincerely anxious to ameliorate the condition of their dependents, and to raise them from their low estate. But what can be done with people who are satisfied to burrow in a mud cabin, or a mere hole in the earth, and to marry, and live, and to bring children into the world, upon poverty and potatoes? Mr. Blacker, with the coöperation of the nobleman whose estate he manages, has effected the most beneficial changes among his tenants, by stimulating their pride, by multiplying their wants, by

calling out their self-respect, by teaching them the best modes of management, and assisting them to pursue these modes.

His first plan was to employ some respectable and skilful farmers from Scotland, well qualified to teach, who were to serve as agricultural instructors. They were themselves to occupy a small farm, on which they were to exhibit an example of the best mode of management and cultivation; and within a prescribed district, they were to visit the cottiers and small tenants, and instruct them in these improvements, looking after them frequently, reporting them, and encouraging them by the promise of handsome premiums for superior skill and industry, to be bestowed at the annual agricultural meeting, at the close of the year. In addition to this, through his Scotch agents, or by himself, Mr. Blacker offered the tenants aid in the form of seeds, artificial manures, improved implements, and sometimes a cow, the expense of which was all to be ultimately reimbursed. The plan has succeeded admirably. One of the first visits was to a small farmer, who had been at one time negligent, addicted to intemperance, deeply in debt, and wholly discouraged, and without even a cow, so important a blessing in a poor man's family. His habits were now changed; he had applied himself most diligently to the cultivation and improvement of his little farm; he had paid his debts; he was keeping two or three cows, and now felt the pride and wore the port of a man. It would be difficult to say what superior benefaction he could have bestowed upon such a man; and the beneficence was gratefully appreciated; for there is a chord in the human heart from which the touch of disinterested kindness seldom fails to bring a response.

I will give the returns of some of these small tenants.

A. B. has fourteen acres. He keeps four cows and a horse. The sales from the produce of his cows amounted in the year to £17 beyond the supplies of his family. Under the system of house-feeding, he says he can keep four cows where he could keep only one before. Such a place as this, it is clear, should not be burdened with a horse. Each acre of his land, he stated, gave him a profit of £5.

C. D. cultivated eight and a half acres, in potatoes, flax, oats, turnips, &c., &c. He kept two cows, but had wisely sold his horse. He paid £9 15*s.* rent, and had cleared, in the previous year, £43, exclusive of butter used in his family. His oats were a magnificent crop; and where they had been manured with the water in which his flax had been rotted, the beneficial effects of the application were most striking. He raised two pigs.

E. F. occupies nine acres. Had last year three cows; this year he is keeping four; sold last year about £40 of produce, exclusive of butter. His cows produce about seven pounds of butter each per week.

All this is spade husbandry and house-feeding. I shall proceed to give some other statements, which did not come under my particular observation, but with which Mr. Blacker was kind enough to make me acquainted.

G. H. stated that he had fed his stock of four cows and two calves upon one acre and two roods of land* all summer, being about one rood and four perches for each cow, after allowing for the calves, and had three roods of turnips, and one of rape, for winter. His whole occupation amounted to eight acres and three roods of land. His stock, of four cows and two calves, he stated, late in the autumn, had been fed, through the summer and up to that time, upon clover and vetches, on the same piece of ground which formerly, in grazing, kept only one cow, and that poorly. This man added, that he was satisfied that there was no way in which land could be made to produce so much, or by which it could be brought into such heart, as by the soiling system, and four-course rotation of crops. He was just beginning to feel the benefit of it, his land being now all perfectly clean, every inside ditch levelled, not a spot in the whole that was not productive, and not any of it whatever in pasture.

I. J. states that when he came to his farm, four years ago, he could only keep one cow, and two acres of such pasture as it afforded was only sufficient to summer-feed her; that he had gradually increased his stock from year to year, until he had now three good cows and a horse, on his eight acres of land, and had now more acres manured than he then found roods.

K. L. states that where formerly he had only two cows, a heifer, and a pony, he now had five cows, two heifers, and one good horse, upon his sixteen acres, kept on clover and vetches in summer, on cabbage in the autumn, and turnips in the winter and spring.

M. N. occupied twenty-three acres of land. His stock was seven cows, two heifers, one calf, and two horses, which were kept in good condition; and besides this, he

* I suppose, in these cases, the Irish acre is intended, which, to the English statute acre, is as the square of 14 to the square of 11, or as 196 to 121.

had nine hundred stooks of excellent oats, and an acre of flax.

O. P. occupied six acres of land. Two acres and two roods were in potatoes, one acre in turnips, and he produced about thirty barrels of oats. He house-fed three cows, three calves, and an ass; he made three firkins of butter; he had two pigs; he had to support a family of eleven persons; and yet he had twenty barrels of potatoes to sell.

Q. R. held four acres, one rood, and twenty perches of land. He had two acres of potatoes in arable land, and three roods in reclaimed bog, of which he had reclaimed two acres; he had one acre of turnips; he had ten barrels of oats to sell; he had made three firkins of butter during the summer; he had house-fed two cows and two heifers. He had thirteen in a family to support, and he expected to sell ten barrels of potatoes; had already sold three pigs at a profit, after paying their cost, of £5.

S. T. held five acres of land. He had two acres of potatoes, three roods of turnips, twenty perches of flax. He had house-fed three cows and a genet. He had made three firkins of butter, and had twenty-four barrels of oats and fifteen barrels of potatoes to sell.

I do not deem it necessary to multiply these examples, although more are within my reach. I need not point out the conclusions to which they lead. Two things, however, deserve particular attention. The first is, that none of the product of the land is lost or wasted. The second, which reveals the whole secret of success, is in the large quantity of manure which is obtained upon this system. It is confidently stated that, where everything is well managed and saved, a single cow will furnish ample manure, in the course of the year, to be applied to an acre of ground. I do not recollect that, in any of the cases which I visited, any provision was made for saving the liquid manure in a tank, so as to be applied by sprinkling to the land. This, if properly done, as may be seen from Mr. Dickenson's example, would have greatly increased the resources of these small farmers.

How far the system is applicable in other cases, every farmer must determine from the circumstances in which he is placed. I have no hesitation in saying that there is no farmer who keeps live stock, to whom the subject is not worthy of attention. Perhaps there is no farmer with whom it may not very advantageously be to a degree applicable. The moving spring of every farmer's success is his manure heap; and how the manure heap is to be created and enlarged every one knows.

The great matter to be considered is, how to obtain a supply of succulent food throughout the whole year. With us in the United States, the plant of Indian corn, for a part of the season, cut green, and as early as it will bear cutting, furnishes the richest and most abundant of all provision. It may be sown broadcast or in drills, and so as to furnish a succession of feed until the frost comes. This advantage cannot be had here

The Italian rye grass is an admirable plant for this purpose. In addition to this, there is a species of rye, called *St. John's day rye*, lately introduced here, which grows luxuriantly, and comes into a state fit to be repeatedly cut very early. I saw this plant cultivated on Mr. Pusey's estate, and there brought into most advantageous contrast with the common rye, which was sown in the same field.

For house-feeding, likewise, lucerne is sometimes cultivated, although not so extensively in England as I had expected to have found it. This requires to be sown on rich soil; broadcast, if the land is clean; but in narrow drills, so as to admit of being hoed, if it is likely to be infested with weeds, which, in truth, constitute a principal obstacle to its cultivation. It is believed there is no more nutritious food to be found for cattle and horses, and none from which so large a product can be obtained from an acre, save only Indian corn, in a favourable climate and soil. It is stated confidently, but perhaps extravagantly, that an acre of good lucerne will keep four or five horses from May to October, when cut just as the flower opens. It requires a dry, rich, loamy soil. The climate of Scotland is said to be too cold for it; but I have known very good crops of it produced in the neighbourhood of Boston, New England. Clover—the common red clover—furnishes an excellent article for soiling, scarcely inferior to any thing which can be found; but its cultivation is too familiar for me to enlarge upon it.

The article mainly depended on in England for soiling, especially for horses, is vetches or tares. These furnish a very large amount of feed, and there is at least one kind which may be cut more than once in a season. Of the vetches which are cultivated for the purpose of soiling in England there are two kinds; one, which will bear to be sown in the autumn; the other, which is sown in the spring, to afford late summer or autumn feed. As well as I could learn, there is no observable difference in them, but that one will endure the winter, and consequently will afford early spring feed, and the other kind will not endure the winter; and the general impression is, that

these peculiarities are the result of cultivation and habit, rather than of original constitution, if the term may be so applied.

After the early and trying part of the season is past, the crops of turnips, swedes, mangel-wurzel, and various tribes of cabbage, under industrious and good cultivation, will furnish an abundant supply of food; in respect to some of them, first in their leaves, and next in their bulbs and roots. Rape is likewise cultivated very extensively, especially in Lincolnshire, for the folding and feeding of sheep. As far as my observation extended, it is not usually cut for sheep; but a temporary fence is put up round a portion of the field, and they are turned in upon it. This being eaten, another enclosure is made; and in this way they successively enter upon the different portions of the field.

That a variety of food is conducive to the health of the animals, and to the increase of the milk of the cows, seems well established by general opinion and by actual experiment. Dried food is much less conducive to milk and to fatness than green; and the effect of dry straw is to produce almost immediately a great diminution of milk. Hay is conducive to health, and to milk, in proportion to the succulent state in which it has been cured, provided, however, it has attained some substantial growth before being cut.—*Colman's Tour, No. 7.*

A simple Method of Protecting from Lightning, Buildings with Metallic Roofs.

By Prof. Henry, from Proceedings of American Phil. Soc., June 20th, 1845.

On the principle of electrical induction, houses thus covered are evidently more liable to be struck than those furnished either with shingle or tile. Fortunately, however, they admit of very simple means of perfect protection. It is evident, from well established principles of electrical action, that if the outside of a house were encased entirely in a coating of metal, the most violent discharge which might fall upon it from the clouds, would pass silently to the earth without damaging the house or endangering the inmates. It is also evident, that if the house be merely covered with a roof of metal, without projecting chimneys, and this roof were put in metallic connection with the ground, the building would be perfectly protected. To make a protection, therefore, of this kind, the professor advises that the metallic roof be placed in connection with the ground by means of the tin or copper gutters which serve to lead the water from the roof to the earth. For this purpose, it is sufficient to solder to the lower end of the gutter a riband of sheet copper two or three inches wide, surrounding it with charcoal, and continuing it out from the house until it terminates in moist ground. The upper ends of these gutters are generally soldered to the roof; but if they are not in metallic connection, the two should be joined by a slip of sheet copper. The only part of the house unprotected by this arrangement will be the chimneys; and in order to secure these, it will only be necessary to erect a short rod against the chimney, soldered at its lower end to the metal of the roof, and extending fifteen or twenty inches above the top of the flue.

Considerable discussion in late years has taken place in reference to the transmission of electricity along a conductor; whether it passes through the whole capacity of the rod or is principally confined to the surface. From a series of experiments presented to the American Philosophical Society, by Prof. Henry, on this subject, it appears that the electrical discharge passes, or tends to pass, principally at the surface; and as an ordinary sized house is commonly furnished with two to four perpendicular gutters—generally two in front and two in the rear—the surface of these will be sufficient to conduct, silently the most violent discharge which may fall from the clouds.—*Silliman's Journal.*

A Word to Boys.—The "Learned Blacksmith" says, Boys, did you ever think that this great world, with all its wealth and woe, with all its mines and mountains, oceans, seas, and rivers, with all its shipping, its steamboats, railroads, and magnetic telegraphs; with all its millions of darkly groping men, and all the science and progress of ages, will soon be given over to the hands of the boys of the present age! boys like you, assembled in school rooms, or playing without them, on both sides of the Atlantic! Believe it, and look abroad upon your inheritance and get ready to enter upon its possession. The Kings, Presidents, Governors, Statesmen, Philosophers, Ministers, Teachers, Men, of the future, are all Boys, whose feet, like yours, cannot reach the floor, when seated on the benches upon which they are learning to master the monosyllables of their respective languages.

Old Jethro Tull said, that if a man was too lazy to do anything else on his field, at least he ought to take a stick and keep stirring the soil!

For the Farmers' Cabinet.

Observations on the Potatoe Disease.

Mr. Editor,—Having observed the progress of the potatoe disease somewhat more closely this season than heretofore, I have seen much to interest and instruct the student in vegetable physiology. I think it proper to give you some of the results of my observations.

I have noticed that peculiar varieties of the potatoe have suffered less from the disease, and resisted its attacks longer than some other varieties. The *mealy* kinds of potatoes, by whatever name they may be called—and they have various names in various sections of the country—have suffered much less under the same circumstances, than those of a *waxy* nature. This fact has been noticed by several others every year since the disease has been so severe, and has had the effect to make many believe that the disease was caused by a deterioration in the potatoe. I will endeavour to show that this fact goes to prove the truth of my theory. You are aware that I attribute the disease to an abundance of carbonic acid, and recommend the alkalies as the proper remedy for it.

The cause of some potatoes being *mealy* and others *waxy*, is evidently that the *mealy* varieties possess more power to assimilate their food, carbonic acid, &c., and convert it into starch, than the *waxy* varieties possess. Starch, you are aware, is composed of carbon and hydrogen. Now the carbonic acid which destroys the *waxy* variety, is apparently assimilated by the *mealy* variety, and made starch of. But this carbonic acid may, and does sometimes come so abundantly, that even the best *mealy* varieties cannot assimilate all of it, and the surplus, if sufficiently great, will destroy them too; while under more favourable circumstances, when the disease is not very bad, the *mealy* variety, by using this extra quantity of carbonic acid, which would destroy the *waxy* variety, escapes the disease, and a larger crop of potatoes may be raised.

You have in your readings seen the views of those who hold that the cause of the potatoe disease is a loss of vital power in certain varieties of the potatoe. If it be considered that the *waxy* potatoe has lost a part of its vitality, which is retained by the *mealy* variety, then there is some reason, in my opinion, for their views. And, indeed, there is nothing improbable in the matter, for the *mealy* variety does exercise a power that the *waxy* does not, whether because it has it not to exercise, or something prevents it, is a matter for future consideration. But that the *mealy* variety has more vitality, I do not doubt, but nevertheless am inclined to think that by a proper system of cultivation, the *waxy* variety may be placed in possession of that principle. A close observation, however, in those seasons when the disease is great, will show to those who hold the idea that this deficiency of vitality causes the potatoe disease, that even the best varieties will suffer from the disease, however great their vitality may be. Thus proving that, although the bad varieties of the potatoe may be more exposed to the disease, that this is no evidence that this badness is the *cause* of the disease.

Those plants which have been raised from the seed of the potatoe apple, may have more vitality than those which have been raised for years from the tuber; and in favourable seasons, when the disease is not very severe, may escape, when those of less vitality may suffer; but in seasons of great disease, all suffer alike in the end, although those of strong vitality may put off the evil day longer than the others. Therefore it would be best to know and meet the real cause of the evil, and thus ensure a heavy crop, no matter how bad the season is, or what variety of potatoe may be planted.

It cannot be doubted that if a bad variety of potatoe be planted and cultivated properly, with every favourable circumstance attending it, that its quality may be improved; and that on the other hand the best varieties may be planted, and if improperly cultivated, with every unfavourable circumstance to contend with, that its quality may be depreciated. Hence, whatever may be the season, or however bad the variety of the potatoe, if we know the cause of the disease, and cultivate the potatoe in the very best manner, we may be assured that the result will be more beneficial to us than if we pursued an opposite course.

I had intended to give you the result of other observations in this letter, but perhaps this is sufficient for the present. Chemico.

Wilkesbarre, Oct. 30th, 1846.

The Alpaca.

Introduction of the Alpaca into Europe.—The greatest number of llamas that were ever carried to Europe at one time, was a herd that arrived at Cadiz, in 1808. It originally consisted of thirty-six individuals, including the sorts called llamas, alpacas, and vicuñas. They were brought from Lima, in Peru, and Concepcion, in Chili, to Buenos Ayres, by slow journeys of two or three leagues. They were fed on the road with potatoes, maize, and hay; but when

their supply of potatoes was exhausted they became so constipated, that it was necessary to afford them medical relief. Eleven only of the number arrived at Cadiz, of which two died there. These animals were carried to Europe as a present from Godoy (Prince of Peace,) to the Empress Josephine; but they arrived just at the period of his disgrace, at the commencement of the Spanish Revolution; and the populace, in hatred of their late minister, were about to throw the llamas into the sea. The governor of Cadiz, however, rescued them; and they were given in charge to an eminent Spaniard, Don Francisco de Theran, who had a fine zoological garden at San Lucar de Barraméda, in Andalusia. The French armies having subsequently traversed this province, Marshal Soult took the llamas under his care; and Monsieur Bory de Saint Vincent, a distinguished French naturalist, who accompanied the army, studied their habits with great attention, and made some drawings of them, which were afterwards lost at the battle of Vittoria. He paid particular attention to the quality of their wool, and transmitted some specimens of each sort to the Academy of Sciences, at Paris. It appears from the report of M. de Saint Vincent and Don Francisco de Theran, that the fleece of the *alpa-vigonia*—the cross between the vicuña and the alpaca—is much longer and six times heavier, than that of any other variety.

The first account of this interesting race of quadrupeds as having been introduced into Britain, was that of the beautiful white and brown female alpaca exhibited by Mr. Cross, in the Surrey Zoological Gardens, from 1810 to 1816, and is noticed and figured in page 217 of the present volume. In a letter to Mr. Walton, dated May 2nd, 1843, Mr. Cross gives the result of his experience in regard to this animal, in the following words:

"As you are desirous of having the result of my observations relative to the alpacas which have fallen under my notice, I beg to say that the first one brought to this country, came into my possession after being for two years in that of Mr. De Tastet, of Halshead, in Essex, who exchanged it with —— Tharpe, Esq., of Chippenham Park, near Newmarket, for a pair of magnificent coach horses. The latter gentleman kept it for about two years, in the hope that one might arrive from Peru of a different sex, as he was anxious to breed from them in consequence of the fineness of their wool. Disappointed in his object, I bought it of him for one hundred guineas, and exhibited it about six years; consequently it must have been eleven or twelve years old when it died.

"It was fonder of browsing than grazing. One remarkable fact I cannot help mentioning, and that is, that it never drank anything during the whole time I had it, though repeatedly offered drink. I fed it upon bran, oats, carrots, and hay; occasionally in the season with a little green tares. Its wool was about eighteen inches long, mixed with some trifling portions of hair. It was remarkably tame, and I may say affectionate. I have since had several others of various colours, some quite black, and others piebald, &c. Having had them so often, I let them take their chance in the stalls, giving them the opportunity of running into a paddock, and they always did well. The last pair I had were perfectly black, and I sold them to Mr. Advenant, who immediately took them over to the King of Bavaria. The late King of Wirtemburg, and other continental monarchs, also had some of me. I think they might be introduced into some parts of this country with great advantage, particularly in the hilly parts of Scotland and Ireland, where they could have an opportunity of browsing as well as grazing. Occasionally they will breed with the llama; and a more elegant animal than the offspring cannot be imagined, but whether the latter will breed again, I cannot say."

About the time Mr. Cross was exhibiting his interesting specimen, the late Duchess of York had four or five llama and alpaca pets at Oatlands, where she took great delight in watching their sportive antics on the lawn, or contemplating their intelligent and expressive countenances, greatly resembling that of the gazelle. They ran the chance of all exotics, whether animal or vegetable; left to the care of servants who, when the master and the mistress are away, usually treat them as mere matters of course, and often with a strong feeling of prejudice. When the Duchess died, these pets necessarily were dispersed; and in all probability, at that early period breeding with them was deemed an impracticability. They, however, lived long enough at Oatlands to render it apparent that they are of a hardy race, although the old and plain-spoken park-keeper has more than once been heard to say, that while under his charge, they were not in their proper element, the grass being too *firm*—meaning too rich and good. —*American Agriculturist.*

Irrigation.

In the second No. of the current volume, page 62, we gave an extract from J. J. Thomas' *prize essay* on this subject. Below, will be found another part of that

valuable paper. We have long believed, and have endeavoured to inculcate the opinion, that farmers in this vicinity—perhaps we might include the whole country—do not sufficiently appreciate the value of irrigation, and consequently do not avail themselves as they might, of the power they have in many situations, to throw the running streams over their grounds. It is by frequently calling attention to subjects of this character, that we may hope gradually to accomplish some good.—Ed.

A SUPPLY of water to plants, is essential on two accounts. First, it is necessary that all plants in a growing state have at hand a supply of the water which enters so largely into their composition. Secondly, that there be enough to dissolve freely all substances which ascend through the stem from the roots; for without solution, no fertilizing substances can enter the plant.

The large quantities of water needed during vegetable growth, are evident from the abundance which exists in nearly all living plants. Some plants contain more than three-quarters of their weight, and most others more than one-half. In addition to this, the enormous quantities thrown off in hot dry weather by perspiration, amounting sometimes to the entire weight of the plant in a day or two, or to several tons daily from an acre, render an abundant supply still more important. Hence the reason they droop and wither so soon, when the usual supply is withheld. Water also, of itself, forms an essential portion of the food of plants, by furnishing nearly all the hydrogen they consume.

But a most important office performed by water, is its solvent power. During its fall in rain, in washing and purifying the atmosphere as it descends, it brings down matter which had previously risen in the form of vapor; and afterwards as it flows along the surface or through the soil, it dissolves many solid substances, and becomes charged with various matters of organic origin, which possess more or less highly fertilizing powers, and which are thus conveyed in a fluid form to the roots of plants. Water thus becomes one of the best and most efficient modes of manuring; the quantity of foreign matter thus held in solution, and the enriching power it possesses, are often almost incredibly large, even though it may appear but little discoloured by their presence. There are, of course, various degrees of foreign and fertilizing matters to be found in water, according to circumstances; from the purest brook or river water, to the heavily loaded drainings of the city sewer, or the farmer's manure tank.

In England, and in all countries so cool and moist that plants do not suffer greatly from drought, the chief benefit resulting from irrigation, arises from the foreign matter contained in the water. Hence it becomes a very important object to obtain such streams as contain the most enriching substances. Some interesting illustrations of this fact have been given to the public. In one case, a gentleman who owned meadows on the bank of the stream which passes through Winchester, observed the great superiority of the waters of the stream below the city, after they had received the drainage of the sewers. The benefits which the plants derived from the water, was strikingly shown by its deteriorated quality after it had passed over the fields and imparted its fertility to the plants. On one occasion, after having long enjoyed the exclusive use of a stream, his neighbour, higher up, imitated his example; and the water, in consequence, was so reduced in value, that he thought of disputing the right with him.

An interesting experiment was made in Scotland, to show this abstraction of dissolved substances by the plants. A stream of water before its use in irrigation, was analyzed, and was found to contain per gallon about ten grains of common salt, and four grains of the salts of lime. After passing over fifty yards of meadow, it was again analyzed, and yielded only five grains of common salt to the gallon, and two grains of the salts of lime.

A long continued flow of the water will thus impart to the plants a large and most important quantity of mineral as well as organic manures. It is not necessary that streams should always appear to the eye turbid or impure, in order to be well adapted to this kind of manuring; indeed, a turbid stream, rendered so by the suspension of clay merely, may be less valuable than a limpid stream, which holds gypsum and various other salts in solution. Several analyses have shown that all *hard* waters contain considerable portions of gypsum or sulphate of lime; and that not unfrequently every two thousand parts of the water of our rivers and brooks, contain one part of gypsum. If, therefore, every square yard of common meadow soil absorbs only eight gallons of water, more than a hundred weight and a half of gypsum per acre, is thus diffused through the soil.

It would be hardly possible to convince the community of the enormous amount of wealth lost to the country yearly, by a neglect to secure the liquid manure with which it abounds. The quantities which are every year swept from our fields and farm-yards, and carried through our lands, unapplied, in running streams, into our riv-

ers and lakes, and into the sea, might safely be estimated at millions. The sewers of towns and villages, alone, carry off a vast amount of manure. A meadow near Edinburgh, belonging to the Earl of Moray, which was watered for several years by drainage from the city, yielded so heavy a crop of grass that it was cut six times a year, and the whole yearly crop was sold at one hundred and twenty to a hundred and fifty dollars per acre.

But even throwing the manuring process, strictly speaking, out of the question, who can estimate the beneficial results of judicious irrigation, if generally applied through the country, wherever running water is accessible? During hot and dry summers, our parched and withered grass fields, and our diminished and stunted ruta baga and potatoe crops, might, in many situations, be at once stimulated into freshness and vigor, and doubtless be doubled in product. The artificial improvement of supplying manure to the soil, is universally practised and commended, and considered the first and last requisite in successful culture; while the artificial application of water, which, unlike manure, costs nothing, nor requires the labour or expense of cartage, but is often equally, if not more important, seems to be nearly unknown. Why should the Yankees be behind other portions of the world in this particular? We do not lack proofs, sufficient to every observing mind, even in the rough and wild manner in which it is performed by the inundation of the flats of creeks and rivers, nor has such proof been wanting, from the overflowing of the Nile in ancient days, down to the present age of the world; but the artificial process possesses this eminent advantage—that while the former is uncontrollable and uncontrolled, the latter may be applied or withheld at pleasure, as the crop suffers from drought, or becomes injured by too heavy a flooding.

Irrigation, like every other farm operation of importance, needs to be conducted with care and skill. A want of judgment or proper intelligence, may in some cases lead to failure, or greatly lessen advantages.

Practice has fully shown that too long a continued and heavy flooding of upland plants, is actually prejudicial to their growth. The plants should enjoy the full benefits of both air and water. There is no better way of accomplishing this object than to keep the water constantly passing over the surface in a tolerably brisk current. It must not be so rapid as to wash away the soil, nor so slow as to stagnate, or to drown the plants. It is only while water is in motion that plants are enabled to draw from it to advantage, by successive fresh supplies, the nutritive substances it contains in solution. A farmer accustomed to the appearance of plants when in the most rapid and healthful state of vegetation, will detect at a glance any injury which an overdose of water may occasion, when the supply should be withdrawn. Excessive irrigation may also prove injurious where it produces a water-soaked subsoil, the remedy for which should be draining. Indeed, so different in nature is a water-soaked and an irrigated soil, that while the former injures, the latter benefits; the former state resulting from a want of draining, and the latter always proving most eminently beneficial on well drained land, where stagnant water can never accumulate.

Equal success has not always attended irrigation, in consequence of the different quantities of enriching matter contained in different streams. The most valuable, usually, are those which have passed through a thickly populated country, and have received and become saturated with different kinds of waste manures. Hence the drainage of sewers, and the washings of roads, are particularly valuable. Sometimes, however, there are fertilizing substances derived from the soil or the minerals it contains, which may not in the least disorder the water, and yet be of very important benefit. These can only be known by their effects in practice, or by analysis. But these considerations more particularly demand attention in cool and moist climates, as in Britain, where the simple application of water is unimportant. Hence there autumn and winter irrigation is much practised, the water being then charged with animal and vegetable matters which have accumulated during the summer. In the United States, where a supply of water during drought and heat is so much more essential, this difference in the richness of water is not so sensibly observed.

In using small streams on considerable acclivities, temporary means of diverting the water from the main channel may be resorted to, and there cannot possibly be a failure. But in larger streams, the work should always be well formed at once. A good permanent dam must be made, and substantial *hatches*, or solid framework furnished with a sliding gate, inserted. In using small streams, many diverging channels may be cut; in large ones this cannot be done, from the cost of many large dams; a single dam may therefore be used, from which a main side channel should pass, to be subdivided according to the circumstances of the case.

Irrigation will always need an exercise of the judgment, to be done in the best manner; no two pieces of land being exactly alike, and the irregularities of the surface varying in many ways, the plan of the work, or the distribution of the channels must vary. Each, therefore, requires a different design, adapted to the circumstances of the case. But no one should be deterred from an attempt, nor lose the eminent advantages of irrigating his grounds, because he cannot attain perfection at once.

It is sometimes objected to watering grass and other lands, that the crop, though greatly increased in quantity, is lessened in quality. This is indeed true to a small degree, but not more so than results from an increased growth by stable manure. The slight inferiority in quality is immeasurably overbalanced by the increase in bulk. No objector would desire his hay crop to be lessened one half in quantity by a parching drought, in order that the hay might be better.

Irrigation is usually applied to grass land, but there appears to be no reason why it may not be greatly advantageous if used for different cultivated crops during our hot summers. S. Williams, of Waterloo, N. Y., states that during a severe drought, he admitted water in small gutters between the hills and rows of vegetables in his garden.

"In ten days early potatoes grew two-thirds in size." In fact he never obtained good potatoes before. Other vegetables were greatly benefitted. The great increase by watering, in the growth of spinach, lettuce and strawberries, by the English and Flemish gardeners, is well known. In a warmer climate, the advantages would be increased. "The melon," says Lindley, "acquires its highest excellence in countries where its roots are always immersed in water, as in the floating islands of Cashmere, the irrigated fields of Persia, and the springy river beds of India." But the same experiments were not attended with such success in London, where the leaves perspire less, and the climate is cooler. During the past summer, raspberry plants, watered by the drippings from the eaves of a workhouse, grew triple the size of others deprived of this advantage.

But as all plants are rendered more succulent by watering, the supply of water should be withheld to all that bear fruit, as the period of maturity approaches, or diminished flavor will be the consequence.

The Starch Manufacture.

Our readers probably are not aware of the extent of this manufacture in the country. Some of the principal establishments for this purpose have been erected during the past few years in the State of Maine, and are doing an immense business.

The Commissioner of Patents in his late report, remarks that in August, 1835—quoting from a public journal—not less than *twenty starch factories* are now being erected in *one county*, viz., that of Franklin; and further says: "About one hundred rods from the centre of Merser village, are two starch factories. They are doing a good business for the proprietors, and also for the farmers in the vicinity, who find a ready market for their potatoes, which as a general thing, is as profitable a crop as is cultivated.

"The starch made is of first-rate quality. It is principally taken to Massachusetts, where it is readily marketed, and consumed mostly in the calico and cotton factories.

"We are informed that one of these factories manufactured into starch the past season, rising 18,000 bushels of potatoes.

"Starch factories are springing up all over the country. Three are under process of erection in Stark's, at different points. There are now being completed, and being erected in Somerset county alone, ten starch factories.

"Here are thirty-five of these factories, in only four counties of Maine; giving to the farmers in their vicinity a market for their potatoes to the amount of about six hundred thousand bushels." Yearly at fair prices, combining the manufacturing and agricultural interests of those counties in a very remarkable degree. The efforts of the proprietors are being crowned with merited success.—*Farmer and Mechanic.*

Cultivation of Fruit Trees.

To the Editor of the American Farmer:

When a few years since, I first turned my attention to the cultivation of Roses, cuttings of rare and valuable varieties would sometimes be given me, having only a very few buds, such as are generally considered good, and terminating in one or more small spurs or limbs of half inch to one or two inches in length, either with roses on them or that had just bloomed, the buds on which spurs are usually too small for working. It occurred to me that I could lose nothing by cutting out and inserting these spurs exactly as I would ordinary buds, and I was pleased to find that frequently these succeeded when the other buds failed. I then tried longer shoots, something near a foot long, and with equal success. Again it sometimes happened that when I wished to insert other buds, they had already started, and as I

could not always afford to throw away most of the few buds I could get, I determined to try these too in the same way, and was pleased to find that these frequently grew off without wilting their leaves at all, and succeeding sometimes when the dormant buds either failed or pouted.

Having commenced cultivating fruit trees about the same time, and being naturally anxious to taste some of the pears that had celebrity, I thought that by inserting the fruit spurs in the same manner into quince stocks, I might have very dwarfish trees that would produce fruit very soon, and I think that I have not been disappointed in either expectation, as I have several trees that have borne fruit or blossomed, that are much smaller than any that were sent me as dwarfs, and have borne fruit several years sooner, as many of the parent trees have just begun also to bear, though my experiments were not commenced until several years after they were received. As I kept no memoranda of these things, I cannot be more particular. The term budding, cannot, with propriety, be applied to this operation, but it conveys a correct idea of the operation, I think; nor is it strictly speaking, at least, according to any of the methods described in books, that I can recall. I graft all the year with equal success, except the months of November and December, in this climate. I also bud whenever the bark will separate freely, and I can procure buds. Last *March* I budded and saved some new roses I received from Paris, and I have budded them with fair success in November, after the frost has killed our crops, and I have moved to the plantation.

Sometimes trees that are purchased at a distance have only a small straight stem with a few lateral shoots, one or two inches long, in such a case I would make one or two grafts of the terminal or upright shoots, and *bud* in the spurs as soon as budding could be done. This operation has most *or all* of the advantages of both budding and grafting without the disadvantages of either.

Robert Chisolm.

Demand for American Produce.

Extract from a letter received from H. Colman, to the Editor of the Cultivator, dated London, 18th of September last. In relation to the demand for American bread stuffs in England, he says:

"There will be a quick demand for all the produce which is likely to come. The best informed and most judicious and sagacious men, are not without alarm for a very serious scarcity of food. The utter failure of the potatoe crop in Ireland is determined, and the consequences are frightful to contemplate. It is quite general here; but I hope that the alarm with regard to the disease among the turnips in the north, is premature. The crops of oats and barley are not large—wheat is more than an average crop; but there will be no surplus, and there is anticipated a very large demand for bread stuffs upon the continent.

"My eighth No. will, I suppose, soon be through the press, as the publishers have all the matter. In this I have treated fully the subject of live stock. I have desired to avoid any improper partiality, and to place the subject in as fair and proper a light as possible. I shall leave now in a few days for the continent, and hope not to be unreasonably long before I send the ninth No."

Cows.

Although we have been favoured with the luxuries emanating from the cow ever since the flood, we are still very ignorant of her value, and of the proper mode of managing her in sickness and in health. We were taught to believe that it was unnecessary, indeed *improper* in all cases, to milk a cow before she had her first calf; and if I am not mistaken, this belief prevails universally at the present day.

Our attention was recently called to a favourite Durham heifer, whose udder was considerably inflamed and distended, nearly three months before her time of calving, and gradually increased for two months, until the size was so enormous and the inflammation so great, that we were apprehensive matter would form in the udder. To prevent this, we ordered her udder to be well bathed, morning, noon, and night, with water as warm as it could be applied without scalding. By this mode of treatment the udder was relaxed, but gradually increased in size, until we were satisfied that she could not be relieved until she was milked. The first effort brought off several pints of thick serous, or watery matter: the second day the discharge was a mixture of water and milk, and on the third day we had the pleasure of measuring seventeen pints of milk; and from this time forward until she calved—which was about one month from the first time of milking—she yielded from 16 to 18 quarts of fine rich milk every day. The calf found the udder in fine condition for sucking, the teats all soft, and the milk flowed upon the slightest compression of his lips. In this way we preserved the udder of one of the finest cows we ever milked;

and we feel very confident that if we had left nature to herself, the udder would have been spoiled.—*Tennessee Agriculturist.*

Transplanting Large Trees.

It is a very general, though erroneous opinion, that large trees cannot be transplanted with safety; and this popular mistake is more singular from the fact, that in England the transplantation of the largest trees has been a matter of daily occurrence for more than thirty years.

Ignorance of their business, is the true secret why so many nurserymen and gardeners fail in transplanting trees. It must strike even those of our readers who never thought of the subject before, that, in transplanting a tree, some regard ought to be had to the habits, soil, and situation of the tree to be transplanted; and that, if this is neglected, it becomes altogether a matter of chance whether the tree lives or dies. A tree twenty or thirty feet high, which has always been in a thick wood, is thin, tall, and fragile—quite a different plant, indeed, from the thick, sturdy tree of the same age and species which has grown up alone in a field; and it would be as absurd to expect one to flourish if transplanted to the forest, as it would be to look for a long life in the other if removed to the orchard. Again, different soils produce different habits; and the maple that has grown up in a loam, will hardly grow if transplanted in the sand. An oak, accustomed to the sunny side of a hill, will not long survive its removal to a bleak marshy exposure. Yet how often are these facts disregarded in transplanting even young trees. How then can large trees be expected to flourish after transplantation, when such outrages on their habits are perpetrated by those who ignorantly undertake to remove them.

It is as easy, however, to transplant trees thirty feet high, and secure their permanent health in their new position, if proper attention is paid to the habits of the tree, as it is to remove water from one cistern to another, or keep alive exotics by the simple expedient of preserving them in a warm room in winter. As early as 1823, Sir Henry Stewart, of Allanson, Scotland, demonstrated the practicability of transplanting trees of the largest size; and succeeded in covering a large estate with elms, sycamores, horse-chesnut, &c., in clumps and alone. His plan was very simple, and will bear detailing:

After he had selected a tree which, from the soil in which it had grown and its general habits, he deemed suitable for transplantation to the spot he wished, he proceeded to bare the roots from the earth, paying the utmost attention not to injure the smallest fibre in the process. A mass of soil, however, was left to form a ball close to the stem, and two or three feet of the original sward was carefully allowed to adhere to it. In this state the tree was lifted from its position, and borne to the place where it was to be planted. This was effected by a machine, made of a long pole, fixed between two high wheels, the pole moving on a pivot, so that it could be raised vertically in order to fasten to it the tree while standing. The latter yet stood in the ground. The hole in which the tree was placed was generally prepared a twelvemonth before; and into this the tree was as carefully set as possible. The roots were then placed as near as could be in the same position as formerly; the lower tier was first arranged, the earth sifted around them and worked in with the hand; the next tier followed; and the process repeated until the tree was firmly fixed in its new position. By this means the largest trees were transplanted with safety, and at a comparatively trifling expense. About three dollars is the cost of transplanting trees in this manner in Scotland.—*North American.*

Deep Ploughing.

At the last monthly meeting of the Highland Agricultural Society, Mr. Girwood, Featherhall, Corstorphine, read a report of experiments in deep ploughing, by Mr. Wilson, Eastfield, Penicuik. Mr. Wilson remarks, that among the various improvements which have followed the introduction of thorough draining, subsoil ploughing is one of the most important. Besides being a valuable auxiliary to draining, by breaking the tenacious till and facilitating the escape of water, it enables the farmer gradually to increase the depth of vegetative mould by the admixture of virgin earth from the subsoil. The farm on which Mr. Wilson's experiments were made is nearly level, with a northern exposure, and a soil varying from gravelly earth to tenacious clay. It had for many years been ploughed from five to six inches deep, and at that depth a hard crust or pan had formed itself, which in some places was almost impervious to water, and in a great degree neutralised the effects of furrow-draining. The first field experimented upon consisted of 13 acres, partly heavy on a clay subsoil, partly light on a gravelly subsoil. It was subsoiled across the drains in October and November, 1844;

a depth of six or seven inches having been first taken by the common plough, which was followed up by the subsoil plough to an additional depth of seven to eight inches. Two acres were ploughed in the usual way. In preparing for a green crop in spring, no difficulty was found where the subsoil plough had been in working through the crust or pan. The whole field was equally manured with a moderate supply of farm-yard dung and guano, and was sown with yellow turnips. The appearance of the whole crop was similar till August, when that portion of it in the subsoiled land took the lead, and when it was lifted in the end of October, the produce per acre where subsoiled was 26 tons 17 cwt., and only 20 tons 7 cwt. where ploughed in the old way, yielding, at 12*s.* per ton, an excess per acre of £3 18*s.* consequent on the experiment. The second experiment was made on a field of deep earth inclined to sand on a subsoil of sandy clay. Two acres were subsoiled 15 inches deep, two were ploughed six to seven inches, and two ridges were trenched ploughed 13 inches. The field was ploughed across in spring, manured in the drill, and planted with potatoes. The crop was lifted towards the end of October, when the quantity yielded by each portion per acre was—subsoiled, 7 tons 9 cwt. 2 qrs.; trenched, 7 tons 1 cwt. 2 qrs.; ploughed, 6 tons 14 cwt. 1 qr.; which, at £2 5*s.* per ton, gave an excess per acre to the trenched land of 16*s.* 3¾*d.*, and to the subsoiled of £1 14*s.* 3¾*d.* Another experiment was made on a field intended for barley after potatoes. The barley was sown about the 1st of April: the subsoiled portion kept the lead throughout; the crop was cut on the 22nd of September, and when thrashed, the produce on the subsoiled land was 8 quarters, 3 bushels barley, and 36½ cwts. of straw, and on the ploughed, 7 quarters, 4 bushels 3 pecks, and 28 cwt. of straw, the difference in money being about £2 9*s.* per acre in favour of the subsoiled. Another small experiment was made when ploughing a field in February, two ridges of which were subjected to subsoiling to the depth of 12 inches. This was not followed by any beneficial result, and the author questions the propriety of subsoiling for a grain crop when the ground is in lea, as it is difficult to lay the furrows so completely as they should be for the reception of seed. Deep or trench ploughing, he thinks may be advantageous to soils of a deep nature, but sometimes injurious to those which are thin, with a sterile and tenacious subsoil. Subsoil ploughing, however, if judiciously performed, he considers can seldom do harm, and that a great variety of soils, especially after furrow draining, will derive much benefit from the operation.

Mr. Girwood remarked, that he agreed with Mr. Wilson, in his views of the soils which should be subsoiled. The operation had not been followed by any great change in the neighbourhood of Edinburgh; that, however, he attributed to the previous draining and deep cultivation, which had gradually affected what subsoil ploughing is meant to produce. The immense crop of barley detailed under one of the experiments was well worthy of notice.—*Kelso Chronicle.*

From the Farmer and Mechanic.

Fattening Hogs.

To fatten a hog or an ox where there is plenty of corn and potatoes, requires no great skill, but to do it in a manner that will render the animal more valuable to the farmer when fit for market than the substance consumed in fattening would be, besides paying for the trouble of doing it, is a matter worthy of consideration.

The summer of 1836 being very dry, my corn and potatoe crop came in light, and compelled me to try an experiment, which I found to work so well that I have since followed it to my entire satisfaction. It was this; I adopted the feeding of apples, of which I had an abundant crop mixed with pumpkins, a few potatoes, and a small quantity of meal prepared in the following manner. For convenience I set in my swill-house adjacent to the stye, a large iron kettle holding about nine bushels, and then had a wooden cylinder made that held from twelve to fifteen more, and hooped with iron bands, just large enough to set upon the arch outside of the kettle, and by putting a little clay or mortar on the arch before setting on the leak—as I called it—I made it perfectly tight, I then had a cover or lid fitted to the top, which was also made tight or nearly so, by laying on a piece of cotton cloth or canvass underneath it, before putting it on.

Into this kettle I first put about three bushels of potatoes washed clean, then filled to the curb with cut pumpkins, and filled the curb to the top with apples, adding two or three or more pails of water, in proportion to the quantity of meal that I intend to mix with it after mashing. After letting this boil a while I remove the cover and fill again with apples, and again make tight.

The apples and pumpkins you will notice are steamed by this process, and when all are sufficiently cooked, they are taken out, well mixed, and a half bushel of corn meal or a bucket of ground oats and peas, or of buckwheat and rye instead, added to the

mixture while hot, and thus rendered more valuable for being cooked with the mass. I think that sweet apples fed in this way to hogs, are worth nearly as much as potatoes, and sour ones more than half as much.

I never made pork with as little expense or less trouble than since I have practiced this method.

I now prepare most of my feed in this way for fattening my beef and mutton, and find it equally advantageous, indeed, I believe that I get the best profit from feeding sheep in this way, particularly my old ones. My course is, in the month of October, to select from my flock all that do not promise fair to winter well, old ewes in particular, which will be likely to die in the spring, as all sheep growers know that they are liable to do, and give them a good chance for fall feed, and also feeding them with the same kind of substances that I do my hogs, and by the first of January have them all first rate mutton, bearing good fleeces. This kind of feed is excellent for milch cows, and cows that come in early, or for ewes that are with lamb. It does well to mix with cut feed, only there should be more water put into the mixture.

When my potatoes get short, I put in beets and carrots for my sheep and cattle, and consider them much better for being cooked. Turnips are easily raised, and are very good food for sheep or cattle during the winter, yet will not compare in value with either carrots or beets. Potatoes or pumpkins are valuable for horses, fed raw. I never knew a horse to be troubled with the botts that was fed with a few raw potatoes every week.

I have made my communication rather desultory, but my principal object in this communication is to show the value of apples for fattening hogs and sheep, when mixed with other substances, and the saving to farmers from picking out their old sheep and fattening them, instead of pelting them in the fall or letting them die in the spring, as many do.

When a sheep gets old and the front teeth partly gone or pointed, the best way is to take them out entirely, as they feed better without than with them.

Yours,

A VERMONT FARMER.

Windsor co., Vt., Nov. 1st, 1846.

Deleterious effects of Brick-yards.

DR. UNDERHILL made some remarks upon the above subject at a late meeting of the New York Farmers' Club, and the following notice is taken from the *Tribune* of that city.—ED.

AT the time when his attention was first directed to this subject, the following incident occurred to establish his opinion. A friend had observed that, immediately after a severe thunder-shower, all his vineyard appeared in a sickly condition, and no satisfactory reason could be assigned for the occurrence of the phenomenon, until the investigation had proceeded sometime, when Dr. Underhill discovered that the gases of a brick-yard in the vicinity had been blown over the vineyard, and produced the disastrous effect, turning the leaves to a dark, reddish brown colour. These gases were stated by the Doctor to be more particularly injurious in the latter stage of the burning of the kiln, and derive their noxious property from the anthracite coal used, the proportion of which is, in the interior of the kiln, three pecks of hard coal to a thousand bricks, and on the outside twelve bushels to the thousand. This he knew to be the case in at least one brick-yard. If there is a light wind blowing, these gases will extend their deleterious influence for miles, the supply being kept up at the yards for hours. They are particularly detrimental to Newtown pippins, the foliage of which is destroyed for miles. The leaves are turned completely over in many cases, and one side is turned to a different colour, a reddish-brown, appearing as if touched by a vehement fire. By these gases trees are often rendered unable to furnish healthy sap for the proper sustenance of the fruit. Speaking of pippins, he mentioned that one of the finest orchards in the country, in the town of Cortlandt, Westchester county, containing from 1000 to 1500 trees, was entirely ruined, principally by the gases from numbers of brick-yards in the immediate vicinity. This subject was referred to a committee, to report to the Farmers' Club.

At a meeting of the Club held since the above, Dr. Underhill said:

The influence of gases emanating from burning brick kilns, injurious to neighbouring vegetation, is the subject, and it is more important than many suppose, to all farmers and gardeners having such mischief in their vicinity. Seven years ago I began to notice this evil, which has since caused a damage of hundreds of thousands of dollars to agriculturists. I will prove the injury or submit to the jeers and jibes of intelligent men! Whether it be this or that kind of gas, I will not pretend to say, but numerous fields and orchards from here to Albany, are severely injured or destroyed this last year, by the gases from burning brick kilns. I now exhibit specimens of Forest, Fruit, and garden vegetable leaves destroyed by these

gases from a brick kiln burning about half a mile from my farm. On one occasion, when my men were at work in the field, there was a gentle breeze attended with fog coming from the kiln, and causing a strong smell, which was perceived all over my vineyard. The men could hardly stay there. On the next day I found the vine leaves greatly injured. The leaves on my orchard were partly killed. I noticed that this occurred on the leaves which contained some moisture. In June, last year, the leaves looked as if fire had passed over them, I had no fruit scarcely in the whole orchard, consisting of twelve acres. Seven-eighths of the young unripe fruit fell off. When these gases come over the farm without there being at the time dew, fog, or rain, there appears to be no damage. Last June, the crop of apples in this orchard was very promising, but when they were as large as marbles, the kiln was burning, and there was a fog—the smoke from the kiln spread over the orchard, and the whole crop of fruit was cut off—the apples all fell off. The sap of the trees became diseased; the injury was far greater than any ever caused by caterpillars. I found forest trees and crops of grain much damaged by the same cause. If the fruit trees should happen to be in blossom when these gases were in the air, the destruction of fruit would occur fifteen miles in the direction of the wind. Orchards have been killed ten miles off by it. During the burning of these brick kilns, great volumes of gas escape for twelve hours together. Whether it be the carbonic acid gas, phosphuretted hydrogen, or sulphurous acid, I cannot decide, but the injury is felt for many miles. Half an acre of carrots, sugar beets, &c., were injured in one night. It affects injuriously all vegetation near Haverstraw. Orchards are killed for three miles. The farmers thought the evil was the plant louse or some other insect.

Prof. Mapes.—Do the brick burners use coal?

Dr. Underhill.—Yes, Sir! Fine coal—but they begin the burning with wood. My Newtown pippins are the most injured. They are rendered rusty, gnarly, spotted with rough and dark spots.

John Conklin's orchard has had nearly 1000 trees killed by the kiln gases, a quarter of a mile off.

Prof. Mapes.—I have listened to the ingenious and no doubt, accurate, observations of Dr. Underhill, and I will endeavour to give the rationale of this case. Coal is ground up with the clay by brick makers. By application of adequate heat, alum is formed from the alumina of bricks and potash. The coal contains sulphur, which heated, combines with oxygen, forming sulphuric acid. Thus from clay—the alumina—we have alum, of which infinistessimal atoms are carried off in the air. It is an error to suppose that the gases could travel in the air ten miles. The fine atoms of alum may—which being deposited upon leaves moistened by dew, fog or rain, would dissolve and directly damage the leaves.

Dr. Field.—I burned some sulphur in my garden, for medical purposes, and found that the fumes had caused immediate injury to plants within twenty to forty feet off. There was not heat enough to do the damage at all.

Dr. Underhill.—The smell from the kilns was strong, and plainly of carbonic acid and of carburetted hydrogen.—*Farmer and Mechanic.*

For the Farmers' Cabinet.

Carefulness in Living.

I LATELY met with the following sentiment, or rather, advice of Dr. Franklin, and I think it is so practically valuable, that the readers of the Cabinet might be served with matter not worth half so much. We use our credit liberally, and forget that what it supplies us with is not our own, and are thus led into an expenditure which others too often must pay for. Farmers may find it easier to keep out, than get out of debt.

A.

"*Beware of thinking all your own that you possess, and of living accordingly.* This is a mistake that many people who have credit fall into. To prevent this, keep an exact account for some time, both of your expenses and your income. If you take the pains at first to enumerate particulars, it will have this good effect: you will discover how wonderfully, small, trifling expenses amount up to large sums; and will discern what might have been, and may be for the future saved, without occasioning any great inconvenience."

WHAT IS BLIGHT?—It is a sun-stroke, or a frost-bite, a plague of insects, or of fungi, a paralysis of the root, or a gust of bad air; it is wetness, it is dryness, it is heat, it is cold, it is plethora, it is starvation; in short, it is anything that destroys or disfigures foliage. Can a definition be more perfect! We should expunge the word as a substantive term from our language, and only use it in its adjective sense.—*Dr. Lindley.*

For the Farmers' Cabinet.

Cheese Making in Virginia.

To the Editor,—I enclose for the Cabinet the following communication, copied for me, I think, from the *Southern Planter*, by a friend of Petersburg, when recently on a visit to Virginia. I think it will be interesting, as showing what may be, and is done in that State. S.

"There is in this county what in this section of Virginia may justly be denominated a curiosity—a *cheesery;* the novelty of which induced me to accept of the very kind invitation of its enterprising and polite proprietor to go and examine its operations; and as a history of what I saw might not be uninteresting or unprofitable to your readers, I propose communicating it, hoping thereby to be able to impart at least a portion of the satisfaction which I enjoyed.

"Mr. Samuel Look emigrated from New York to this county in January, 1845. He rents a farm containing four hundred acres, one hundred of which are in wood, for which he pays an annual rent of four hundred dollars, and furnishes clover seed, plaster, &c. He commenced under very disadvantageous circumstances, having had to make entire preparations for his cheese operations, and he encountered a great drawback in the drought which prevailed to so great an extent, and the consequent diminution of the grass crop; but notwithstanding these difficulties, his success was equal to his most sanguine expectations, thereby astonishing his neighbours, who first regarded the project as visionary, and predicted that it would be a failure. The present year, of which I propose giving a more minute description, he has none of those difficulties to encounter, and is succeeding to admiration. He keeps thirty cows, which he manages to calve about the first of April. He fattens all his calves, and at one month old he carries them to market, where they bring him four dollars per head. At this time he commences the manufacture of cheese, which is continued until the first of November, each cow upon the average producing two pounds of cheese per day, making an aggregate of ten thousand and eight hundred pounds, for which he finds a ready and convenient market, at 10 cents per pound, equal in money to $1080, and from the whey he fattens twenty hogs, which he keeps in pens at a convenient distance from his *cheesery*, and from which he accumulates a quantity of good manure. The whole of this operation is conducted without interfering in the least with the other business appertaining to the farm. The cows are milked whilst the horses are feeding, and then the milk is turned over to the females, who convert it into cheese. In addition to this, Mr. Look cultivates quite extensively, and I might add, from present appearances, profitably. He seeded last fall one hundred bushels of wheat, which promises a rich return. He has about seventy-five acres of exceedingly fine looking corn. His oats, rye and grass, look remarkably well—indeed, everything presented a most prosperous appearance. He designs as soon as he succeeds in getting his land well taken in grass, to extend his *cheesery*, believing that he can thus realize more than by the cultivation of the soil, particularly when the additional labour and expense attending the latter are taken into consideration; and besides, he says, by that system he can greatly increase the fertility of his land; for although Mr. L. lives upon rented land, he seems never to disregard his landlord's interest. Mr. Look expresses himself delighted with Virginia, particularly with her climate, and says all that is required to make her a great State, is better roads, and a more enlightened system of education. I hope Mr. Look's success will be the means of inducing some more of his friends to follow him. I am satisfied that no portion of Virginia offers superior inducements to emigrants than Prince William county. The exceedingly low price of her land, its natural fertility, easy access to market, health, society, &c., are advantages of which other counties cannot boast. But, Mr. Editor, I have digressed from my subject. My object in writing this communication was to attract the attention of the farmers to the subject of making cheese, and I think Mr. Look, by his experiment, has demonstrated beyond cavil the practicability of manufacturing it in this county. The question now naturally arises, would it not be infinitely better for, at least, a portion of the farmers of this county to imitate the example set them by Mr. Look, and give this branch of business some attention. Whilst the farmers generally in this section who rent land and hire labour, cannot make "buckle and tongue meet," Mr. Look is realizing, after paying all expenses, the handsome sum of a thousand or twelve hundred dollars per annum; the reason is obvious. If you abstract the amount realized from his cheesery, the products of his farm would not more than pay expenses and support his family. He says the art of making cheese is very plain and simple, even more so than that of making butter."

S. B. H.

Prince William, June 12th, 1846.

For the Farmers' Cabinet.

Canker-Worm Moth.

Friend Tatum,—From an article in the third number of the current volume of your paper, page 93, I infer that the canker-worm is unknown in Pennsylvania. We have suffered so much from it here, that we are glad to find any of our agricultural friends are exempt from its ravages. During the last two or three years, the number of these insects has been very small; but the race is not extinct. The creatures are now coming out of the ground; and every morning the females may be seen on trees and fences patiently waiting the approaches of their volatile mates, or creeping along in search of a place whereon to deposit their eggs. These females are three-eighths of an inch long. They are plump and oval in shape, have two threadlike horns or antennæ, and six slender legs; but they are absolutely wingless. They are of an ashen grey colour above, and light grey or whitish beneath. The males are also ash-coloured, but they have wings. Their fore-wings are darker than the hinder pair, have a white spot on the outer edge near the tip, and a few blackish spots, frequently indistinct, upon them. They expand one inch and a quarter. A more full account of this insect is given in the article Span-worm, in the Farmers' Encyclopedia, and in the original work from which that article was wholly copied. It will be seen by the foregoing brief description, that the "insect one and a half inches long, head beautiful brown, four rudimentary wings, external pair brown, &c.," supposed by your correspondent to be "the female of the canker-worm of New England," is entirely distinct therefrom.

Yours, respectfully,
T. W. H.

Massachusetts, Oct. 18th, 1846.

Lands in Virginia.

From a letter from S. S. G., of Moorestown, N J., dated the 17th ult., we make the following extract.—Ed.

"My recent visit to Virginia furnished me with abundant evidence that the advantages of that country have not been overrated. Indeed I believe they are not yet half appreciated. The intelligent people there are satisfied that they cannot hope for improvement without the aid of industrious freemen, and they hold out every encouragement for Northern farmers to come and settle among them. I accepted the invitation of R. B. Bolling, at whose house in Petersburg, I was very kindly entertained, to make another visit to Sandy Point:* to any one fond of agriculture, and interested in the improvement of the soil, a visit to this noble estate would of itself amply repay the journey. In a communication to the Cabinet,† I described the wheat crop as it appeared in the beginning of the fifth month—he sold 14,000 bushels of wheat, after reserving about 1400 for seed; the latter part of the harvest was exceedingly wet, and the loss of grain in consequence very heavy—this fall he is seeding about 900 acres, and on ground which he thinks in better heart: we rode through the corn-field of 525 acres, from which he expects a yield of 50 bushels per acre, and I think he does not overrate it. The wheat seeded this year is in beautiful order, as indeed is everything about the farm. There needs no stronger proof of the susceptibility of this country for improvement, than this estate affords—a few years ago it was so poor as scarcely to meet the expense of cultivation; now it is highly productive, and must return a large revenue—15,000 bushels of wheat and 26,000 bushels of corn, besides the fine stock and other crops, produce a handsome sum. This estate is in the S. E. corner of Charles City county, on the north side of James River—the county of Surry is on the south side of the river, having its N. W. corner opposite Sandy Point: this county abounds in inexhaustible beds of the richest calcareous marl, is as little cultivated as any other of the eastern counties, being now chiefly valued for its timber. The land is much of it now to be had for $2 per acre, and is susceptible of high improvement and productiveness. As soon as Northern farmers become acquainted with this region, I think it must be filled up and become one of the richest agricultural sections in the Union."

When a crack is discovered in a stove, through which the fire and smoke penetrate, the aperture may be readily closed in a moment, with a composition consisting of wood ashes and common salt, made into a paste with a little water, plastered over the crack. The effect is equally certain whether the stove be cold or hot.—*Maine Farmer.*

Let the sun's first rays shine upon your head in the morning, and you will not lack a good hat to defend you from its scorching rays at noon.

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* A notice of this estate may be found on pages 19 and 79, Vol. 7, Farmers' Cabinet.

† See last Volume, page 329.

The Potatoe Blight.

A WRITER in the Globe estimates the value of the potatoe crop in the United Kingdom at £23,000,000, and sets down the loss to Ireland, in consequence of last year's failure, at £10,000,000. The Cork Reporter calculates that out of 130,880 acres planted with potatoes in that country, 100,666 are already blighted and destroyed.

No means exist of testing the accuracy of these calculations, but the mere fact of such enormous estimates being made, is sufficiently expressive of the gravity of the question. It shows, conclusively, that under the most favourable point of view, the destruction of food must have taken place to a most alarming extent, especially when it is borne in mind that similar losses were sustained in all the great potatoe countries of both hemispheres.

The disease was introduced into Genoa in 1845, with English potatoes, and we know too well how fast it spreads; besides which, we see from the French papers that in the department of the Var the potatoes, although not much diseased in the fields, were rotting rapidly as soon as they were stored—July 17th—that the crops raised from northern seed have enjoyed no immunity; and that the coast line—we presume from Toulon to Draguignan—is now infected, as well as the hilly districts.

The farmers in the territory of Nice were already, on the 11th of July, pulling up their potatoes, in order to save them from the murrain, which had attacked their second crop. We may add, that since the Neapolitan potatoes planted in England, have proved to be as diseased as our own, there is reason to fear that no supplies can be had from Naples this year. Add to this that the mischief has reappeared in Germany, that wheat is actually dearer in Holland at the present moment than in England, and we have as ugly a symptom of impending scarcity as the amateur of high prices can well desire. Unfortunately, too, this is but a portion of the picture. Wheat is a solitary article of abundance. Turnips are but half a crop; the same is true of other roots, and of beans and peas; barley is short and oats not heavy. And where is our fruit? the apples, and pears, and plums of the cottagers and small farmers; they, too, have failed! Even in the isle of Jersey there is not more than two-thirds of the usual quantity, and Jersey is a favourable example. All these things are articles of food, either directly or indirectly. We consume them in the form of meat, if not of bread, and their places must be supplied, or the consumers must be put on short allowance. The labourer who feeds his children with apples gives them food, not luxuries; they stand in place of something else, and must, therefore be replaced. In the present instance it appears impossible to do so, except with corn. The continent seems but little capable of assisting us in the article of grain; it will have enough to do to feed its own population.

In fact, we understand that wheat is actually exported to Antwerp at the present moment, and we must remember that the great continental harvest is gathered in. Meanwhile, in the course of last week, rice and oats have advanced in price from 1*s.* to 1*s.* 6*d.*; wheat, 4*s.* or 5*s.* a quarter; flour, 1*s.* 6*d.* a barrel, and meat of course is partaking of the dearness.—*Daily News.*

In the speech of the Queen, read by the Lord Chancellor at the prorogueing of Parliament, on the 28th of eighth month last, she says:

"Her Majesty has to lament that a recurrence of a failure in the potatoe crop, in an aggravated degree, will cause a serious deficiency in the quantity of a material article of food.

"Her Majesty has given her cordial assent to measures by which this calamity may be mitigated in that part of the United Kingdom where the cultivation of the potatoe has hitherto afforded the chief supply for the subsistence of the people."

This is conclusive proof that the disease is of a very grave character.—Ed.

Agricultural Society of Prince George County, Md.

We have received through a friend the proceedings of this Society, containing an Address by John H. Bayne, from which the following extract is made. Our friend A. C. gave some account of the Annual Exhibition in our last number, page 131.—Ed.

In no occupation can a healthful activity of the mind and body be more happily blended than in the pursuit of horticulture. Its manual operations are so promotive of health that the professional man, and even sedentary females, may devote advantageously a portion of their time to it in each day. The perfect order and beautiful arrangement in the vegetable kingdom are calculated to inculcate the lessons of love, kindness and philanthropy.

As a scientific pursuit, it strongly recommends itself to the contemplative inquirer. Whether we regard it as an art or science, administering substantially to our wants, or diffusing useful knowledge, it merits our highest consideration.

The study of the organic laws of nature, of the culture of fruits, flowers and vegetables, should be familiar to all. It is a saying of old, that he who succeeds in making two blades of grass grow where but one grew before, merits the appellation of benefactor. The same doctrine will apply with equal force in reference to the introduction and cultivation of valuable fruits and vegetables. The sails of commerce which whiten the ocean, may bring back riches for the merchant. The name of the philosopher who makes discoveries in the abstract sciences, will be handed down through successive ages. And even immortality will be acquired by the military chieftan who has distinguished himself by the extermination of thousands of his fellow beings. But all this is "the bubble reputation," and when compared with the names of the true philanthropist and benefactor—those who have made valuable improvements in horticulture and agriculture—should sink into the shade. But we rejoice to say a new era is dawning upon us. A taste for these pursuits is pervading the whole Union. Every grade of society is becoming interested—and we hail it as a happy omen of progressive refinement. The possession of wealth is not necessary to their enjoyment. The picturesque scenery; the varied landscape, and the fragrance of the sweetest flowers, can be enjoyed by those in humbler walks of life. The beauties of Flora and the bounties of Pomona are within the reach of the humblest cottager. Says Lord Bacon, "God first planted a garden; and indeed it is the purest of human pleasures; it is the greatest refreshment to the spirits of man; without which buildings and palaces are but gross handy works."

In the departments of floriculture and ornamental gardening, we find many persons who recoil at the mere mention of them. They oppose them on the ground of yielding no revenue, as if the only design in our creation was the accumulation of wealth. But shall we reject those pursuits which are so well calculated to soften the asperities of our nature, and which have been the choice of the virtuous and enlightened from time immemorial. There is no surer evidence of cultivated taste, or of rural happiness, than we see in those floral ornaments, whether appended to the humble cottage or to the splendid palace. Nature, in the display of her inimitable floral gems, will always afford a fascinating employment. No pursuit is more congenial with female character, or tends more to elevate and refine it. In the shades of rural retirement, her virtues expand; woman is rendered more lovely, and domestic happiness is consummated.

To afford you occular proof of the wonderful achievements of horticulture, I would refer you to our large cities and their surrounding country. Their markets are crowded with the choicest fruits, flowers, culinary productions, and ornamental plants in countless profusion. Their environs studded with villa residences, elegant gardens, ornamental grounds, conservatories and graperies—affording comforts and luxuries to millions, and profits to tens of thousands.

The introduction of new and valuable fruits seems to be an absorbing subject with Pomologists throughout the civilized world, and it is certain that nothing contributes in a more eminent degree to the comforts of the consumer, or affords a greater profit to the cultivator. Ripe fruits are healthful, light, nutritious, and of easy digestion; producing a chyle admirably adapted to the functions of the human body. From the qualities which they possess, their habitual use, according to Mr. Knight, destroys the artificial appetite for strong fermented liquors and the preparations for alcohol. But to go into a classification of the various fruits of standard excellence, and to give directions for their cultivation, would require a volume. For all necessary information, I refer you to the works of Lindley, Thatcher, Kenrick, Downing, and Hovey's invaluable Magazine of Horticulture.

Loudon, Lindley and Knight of England, and Van Mons of Belgium, by their unwearied labours and profound researches in Pomology, have left enduring monuments to their memories. Knight and Van Mons in establishing their respective theories, have originated more valuable fruits within the last forty years, than had been done previously by the whole world during a period of twenty centuries. Knight's plan was accomplished by cross fertilization. The pollen or fertilizing powder is delicately removed from one flower and transferred to some tree bearing flowers strongly related to the first, and is there carefully placed upon the summit of the pistillum in the flower intended to be fertilized. This prepared flower is then protected with thin muslin or gauze, to exclude the bee or insects which would otherwise frustrate the process. The seed produced from these hybridized fruit are carefully saved and planted, and according to the qualities of the parents, you obtain new and valuable varieties.

The immense collection of fruits added to our lists by the indefatigable labours of Van Mons, has been astonishing. His theory for

the multiplication and improvement of the various fruits originated with himself. And had it not entered into the conception of that extraordinary man, in all probability it would have continued to this day locked up among the arcana of nature. No predecessor had left a ray for him to begin with. The lights of science could not be called in to his aid. It was only to be demonstrated by unwearied perseverance through the protracted and inexplicable operations of nature. It was the suggestion of his own mind. The result of his experiments has established an important era in the history of fruits. Van Mons ascribes the success of his experiments, by which so many fruits of such great merit were obtained, to this principle: That in proportion as a fruit becomes removed from a state of nature by repeated regeneration—that is, by always planting the seed of the last production—in the same degree will the fruit become ameliorated, until it attains the highest perfection of which it is susceptible. In the application of this principle, he has ascertained that the Pear, when raised from the seed, requires seven generations to arrive at its highest perfection. The first generation, or the period from planting the seed of the domesticated pear, to the time of its first fructification, required a period of fifteen years. The second generation embraced a period of ten years; and so on with the period for every successive generation in a decreasing progression. The whole period to accomplish his theory requiring about forty years.

The Apple, upon the same principle, required a period of four generations. The Peach, Apricot, Plum, and Cherry, required three generations. From the astounding results growing out of the experiments of this man, we have a legacy bequeathed to us, which affords us an advanced position, to prosecute our experiments with a certainty of success. It will be the privilege of future generations to determine the limits that nature will go in the amelioration of fruits. In illustration of this theory: who, for instance, could detect the relationship between the delicious class of Beuerres and the little austere wild pear, which grows spontaneously in your field? What resemblance can you trace between the magnificent Gage Plum and the savage Sloe; or between that king of apples, the Golden Pippin, and the sour Crab? And last, though not least, who could recognise in the native Strawberry the type of that splendid variety denominated Hovey's Seedling. But as astonishing as these transmutations are, they have been produced by this ameliorating process. I have enumerated these seminal productions to show that the Pomologist has been richly rewarded for the prosecution of his employments. Time will be usefully and honourably occupied in the origination and introduction of fruits based upon these theories. This pursuit recommends itself strongly to the young—and to create a taste for it should be the effort of those who feel an interest in their happiness. Children soon become deeply interested in employments of the garden or field, and acquire a stability of character and firmness of purpose which enable them to resist the seductive influences of vice; and in future time, as you examine the annals of natural science, you will find their names recorded as distinguished patrons.

But of the diversified productions of the field and garden which it is our privilege to enjoy, few are indigenous to America. Of the cereal grains, for instance: Wheat and rye were originally brought from Siberia; buckwheat from Asia; rice from Ethiopia. Of our vegetable productions: The artichoke from Brazil; the cauliflower from Cyprus; asparagus from Asia; the pumpkin from Astracan; the ruta baga from Sweden; and the tomato from South America. Our fruits from countries equally remote. The pear came originally from Europe; the peach from Persia; the apricot from Armenia; the plum from Lyma; the cherry from Pontus; the quince from Austria; and the almond from China. It is evident that in the distribution of the bounties among the various nations of the earth, Providence has designed to show us our mutual dependence upon each other. In the discharge of the obligations imposed on us for these blessings, we should disseminate those productions of the garden and field extensively. For all men will eat fruit, says Sir William Temple, so that the choice is only whether one will eat good or ill—and of all things produced in a garden, whether of vegetables or fruits, a poor man that has one of his own, will eat better than a rich man that has none. And I rejoice to say that a poor man has the privilege of enjoying those luxuries almost in an equal degree with the rich man.

"Be active, be active—
Find something to do,
In digging a clay bank
Or tapping a shoe.
Don't stop at the corners
To drag out the day—
Be active, be active—
And work while you may."

Artesian Well.

An attempt is making at East Boston, to sink an Artesian well. The process was by boring a sufficient depth to obtain a supply of water for the accommodation of the citizens upon the island—the population of which is so rapidly increasing in numbers. The operator has abandoned the common earth auger, and has invented a cast iron *tube*, about eight inches in diameter, and about ten feet long. It is armed at the end with two prodigiously strong chisels, and just above them is an ingeniously devised valve. At the other extremity is a wrought iron handle, fastened to which is a stout, short-linked iron chain to raise it up and down. When in action, it operates upon the principle of a common chopping knife so familiar in mince pie manipulations. The engine raises it and then lets it fall, like the perpendicular movement of the dasher in the obsolete method of churning butter. As the bits of stone or other materials accumulate every time the massive tube drops, they are forced up into the tube and retained. Finally, when enough has been chopped to fill the cylinder of the drill,—the name given it,—the engine draws it to the surface to be emptied. The cost of the one Mr. Higgins is labouring with was $600. The Boston Transcript gives the following account in relation to this invention:

Before resorting to this unique contrivance at all, an ordinary well was dug 140 feet, to a stratum of hard, compact gravel, interspersed with water worn stones of various sizes. On this Mr. Higgins set a cast iron tube of 10 inches diameter; and another on the top of that, secured by water tight joints, and so on, to the very outlet above ground. This long, ponderous cylinder is carefully braced on the outside all the way, to keep it exactly perpendicular, and within it the mighty battering ram is let down and set in motion against the realm of Pluto. As fast as the hole was deepened, the weight of the superincumbent pipe pressed down farther, paring the sides as it ground along. All accumulations from that source, with its own chips, were secured by the valve. After passing through 10 feet of the mixture described, the instrument struck a hard, blue slate stone, through which Mr. Higgins urged his way at the average rate of six feet a day for 145 feet. Next he came upon a bed of talc, of a greenish grey colour, greasy to the touch, one variety being recognized among tailors under the name of French chalk, and used for marking on cloth the course of the shears. Finally, on Saturday evening last, the cutter had penetrated eight feet into that stratum, making the entire depth at this date 303 feet. The tube rests on the slate by which it is sustained; and water, soft and agreeable in flavor, rises in it to the height of 200 feet; probably it comes from between the seams and fractures of the rock, since none can possibly be forced in laterally.—*American Rail Road Journal.*

Improvement in Nail Making.

We have recently examined the drawings of a machine for manufacturing horse shoe, and other nails, on a new and ingenious plan, patented by Mr. Jedediah Holcomb, of Brandon, Rutland county, Vermont; and also have seen some specimens of nails manufactured by this method. They are made from hammered plates, with the grain of the iron lengthened, and the nails and proportions appear as perfect as those made by the usnal hand process. By Mr. Holcomb's method a good mechanic can make 400 lbs. of horse shoe nails per day. The machinery is simple in its construction, and promises to work an entire revolution in the nail manufacture. He has taken measures to secure patents in England and France for his invention.

In addition to the above, which we copy from the *Eureka*, we can speak in the most favourable terms of the invention, and from a personal interview with Mr. H., of the above machine, we are convinced that the utility of the invention is very great. From data in our possession we estimate the quantity of horse shoe nails used annually in the United States at 2000 tons, and if by this invention three cents per pound can be saved in their manufacture, the gain would be quite a *desideratum* for those interested.—*Farmer and Mechanic.*

Advice to Young Men.—"Let the business of every one alone, and attend to your own. Don't buy what you don't want; use every hour to advantage, and study even to make leisure hours useful; think twice before you spend a shilling, remember you will have another to make for it: find recreation looking after your business, and so your business will not be neglected in looking after recreation: buy low, sell fair, and take care of the profits; look over your books regularly, and if you find an error, trace it out: should a stroke of misfortune come upon you in trade, retrench—work harder, but never fly the track; confront difficulties with unflinching perseverance, and they will disappear at last; though you should even fall in the struggle, you will be honoured: never shrink from the task."

Crops in Scotland.

We insert the following, taken from the *Kelso Chronicle*, not entirely on account of the information it gives in relation to the crops, but partly as an illustration of the careful estimates made by our British friends, of every thing that throws light on the amount of so important a matter as bread stuffs. With their dense population, and the consequent vast amount daily consumed, these are all important to the welfare and even existence of the people. With our vast extent of country, prolific soil, and sparse population, we can scarcely comprehend the causes of anxiety that exist in the older countries, about what seems scarcely to cost us a thought.—Ed.

The harvest being now concluded, not only in this district, but with few or unimportant exceptions, all over the county, and having had sufficient deliveries of the new grain to enable us to judge of the quality of the crop, and from the best information we can collect to form an opinion of its extent, we now do ourselves the pleasure of submitting to you the following observations.

In regard to the general course of the weather during the season, we may remark that oats, and the earlier sown barley, were got into the ground under very favourable circumstances, between the middle of March and the middle of April; after which, owing to rainy weather, the ground was never in very good condition to receive the later sown barleys; from the last week in May until the last week in June, the weather continued very fine, and during many days it was oppressively hot, in fact, much more so than is usual in this climate. Towards the end of this time the spring crops on all dry lands appeared to be suffering from the drought. During all July and the greater part of August, although we had a high temperature and occasionally fine dry days, the general character of this period was unusually moist with severe thunder storms and deluges of rain, frequently sufficient to raise the streams as high, or even higher than during the winter floods. The first week of August brought us to partial harvest, and in two weeks thereafter the whole crop had ripened with extreme rapidity, but the cutting down and carrying was much interrupted by the unsettled character of the weather, until the last week in August, when it then became very favourable for harvest operations, and has continued so ever since; in fact, notwithstanding the partial interruptions during August, we have never known a season when the crop was better secured, or with greater facility to the farmer.

Wheat occupied fully its usual breadth. It is of fair quality, and with the exception of a small portion carried too hastily, has been all stacked in fine condition. The yield per acre may be estimated at one-sixth under an average produce, and the straw is deficient in bulk. Some samples weigh 64 lbs.; but best runs will not much exceed 61 lbs. to 62 lbs.; second, about 60 lbs. per bushel, while some will come a little under that.

Barley held beyond its ordinary breadth. It has all been stacked in fine order. In bulk of straw it is very deficient. The yield per acre we reckon to be a full fifth under an average. Being well ripened, it is of good colour, and has been found to malt remarkably well. In weight it is nearly 2 lbs. per bushel under last year's, but it is thought its intrinsic quality will compensate for the deficient weight. Our best samples weigh only 54 lbs.; good runs, 51 lbs. to 52 lbs.; ordinary about 50 lbs.; and inferior as low as 47 lbs. per bushel.

Oats.—The breadth sown this year certainly did not exceed that of last year. This crop has been well secured, and appears bulky in the straw. The yield per acre, is variously estimated, and we have much difficulty in forming an opinion; on hard soils it is probably very deficient, while on the freer or lighter soils, and even on high ground, we consider it fully an average. On the whole, we are disposed to estimate it at not more than an eighth or a tenth below an average. The weights, per bushel, are—best, 42 lbs.; second, 38 lbs. to 39 lbs.; and inferior down to 35 lbs. per bushel; being from 2 lbs. to 3 lbs. per bushel lighter than last year; notwithstanding which, their mealing quality is much better than the weight indicates.

Beans occupied much more than their usual breadth, and in some parts of the county nearly double; but the yield per acre, will not be half the usual average. They have, doubtless, been well secured; and the quality, of such as we have seen, is satisfactory. They became prematurely ripe, and appear to have been peculiarly affected. Many think they suffered during the season in a manner analogous to the potatoe, as the leaves were similarly blackened about the same time.

Peas.—The quantity sown in this district is so very unimportant that we deem it uninteresting to offer a remark on this portion of the crop.

Potatoes, whether planted whole or cut, or whether the seed was tainted with disease or seemingly sound, seldom brairded better, or had a more promising appearance until about the third or fourth week in July, when the tops were universally blighted, and disease appeared among the tubers,

manifesting itself in many of the larger or later kinds in immediate and complete rottenness, and in others, probably of the firmer sorts, causing a dry brownish discolouration under the skin; while in some of the earlier varieties the roots remained sound. The crop we can only estimate as a total failure, although doubtless many of those not entirely rotten, may be used for cattle-food or otherwise; while perhaps a twentieth part of tolerably sound potatoes may be selected out of the crop. It is difficult to offer any useful opinion as to the cause of this inscrutable disease: it appears to us to depend on some unusual state of the atmosphere, and we are led to form this opinion from believing that several of our hardy forest trees, ferns, and even the common nettle of the country, appeared by their leaves as if affected in a similar manner to those of the potatoe.

Turnips occupy a large breadth. The crop is very various—on really good turnip soils—where sown in good time—they are fine, while on hard or wet soils they are a poor crop. They have improved a good deal within the last few weeks.

There is a considerable quantity of old wheat held by the farmers, but little or none of any other kind of grain. Comparatively high prices will probably rule until another harvest; but we may expect very heavy importations of foreign grain, which will serve in some measure to moderate them.

For the Farmers' Cabinet.

Farmers' Tools.

To the Editor,—It is a common saying, as old as one of the Grecian philosophers, that "time is money;" and old Richard said that a "penny saved is as good as two pence earned." Inasmuch as the income of the farmer under ordinary circumstances are slow, and are laboured for in the sweat of his face, before they come at all, it is all-important that his outgoes should be few as possible. In order to reduce them within as narrow limits as practicable, he must make on his farm, and within himself as many of the articles he may need, as he can, without making them cost him more than their actual purchase would. A word to the wise, may be improved upon, and I venture, though perhaps rather deficient in the matter myself, having but little mechanical turn, to suggest to my fellow farmers, the importance of providing our sons and labourers with tools, and a convenient place for using them, so that simple articles necessary in our business may be made, as well as repairs done at home, without the waste of time occasioned by taking them to, or of money in bringing them from the mechanic. We need hardly be reminded how much may be done in this way in stormy weather by our boys, when they could do but little else. But to carry out these views, a workshop as well as good tools, should be provided. The necessity also of keeping these tools in their places, should not be lost sight of, or habits of carelessness may grow up in youth that will be hardly overcome in manhood. To me the buildings on a farm kept in good repair—the gates and doors, and latches, &c., all as they should be, give a tidy feeling to an observer, and where boys are accustomed to the use of tools, this is apt to be the case.

Thrifty.

Go forth into the Country.

Go forth into the country,
From a world of care and guile;
Go forth to the untainted air,
And the sunshine's open smile;
It shall clear thy clouded brow—
It shall loose the worldly coil
That binds thy heart too closely up,
Thou man of care and toil!

Go forth into the country,
Where gladsome sights and sounds
Make the heart's pulses thrill and leap
With fresher, quicker bounds.
They shall wake fresh life within
The mind's enchanted bower;
Go, student of the midnight lamp,
And try their magic power.

Go forth into the country,
With its songs of happy birds,
Its fertile vales, its grassy hills,
Alive with flocks and herds.
Against the power of sadness
Is its magic all arrayed—
Go forth and dream no idle dreams,
Oh, visionary maid!

Go forth into the country,
Where the nuts' rich clusters grow,
Where the strawb'ry nestles 'mid the furze,
And the holly-berries glow.
Each season hath its treasures,
Like the air, all free and wild,—
Who would keep thee from the country,
Thou happy, artless child!

Go forth into the country,
It hath many a solemn grove,
And many an altar on its hills,
Sacred to peace and love.
And whilst with grateful fervour
Thine eyes its glories scan,
Worship the God who made it all,
Oh holy Christian man!

Dublin University Magazine.

Virginia Lands.

A FRIEND who feels a lively interest in the resuscitation of Virginia lands and the promotion of Virginia interests, has copied the following from the *American Farmer* of last month, and forwarded it for insertion in the Cabinet.—ED.

MR. EDITOR,—I herewith give you some extracts from a letter I received from a friend of mine, who is now living in Surry county, Virginia. You are aware that much is said and a great deal written and published about the advantages of going to Virginia to buy land, and farm—feeling an interest in giving the experience of others well calculated to judge, for the benefit of your readers, I have copied part of the letter in order that some might be benefited. The writer is a gentleman somewhat advanced in life, raised a farmer, and always followed it; he had a good training and good land to operate on, in a part of Chester county, Pa., that will compare with any other land in the State, at least in any other part of Chester county; added to this, he is an agricultural statistic, a plain blunt man, who writes what he thinks and sees, without fear of being called in question by any. I had written to him and stated several points that I wished information on; his letter takes these separately, and answers them very satisfactorily.

"Sept. 1st, 1846; Never in my recollection, have I enjoyed good uninterrupted health so long, as since I came here, and all the family have been well except M., who has had something of her old complaint —I believe Erysipelas. I see nothing here indicative of sickness; if people anywhere would live as many do here, they would be sickly; out late at night hunting, and going home drunk and reckless of every means to preserve health; if not so, why the undue proportion of sickness and death among the males, which is about four to one; in most countries they are about equal. I do believe, all things considered, there cannot be a better place to live, or a more delightful climate; I have felt far warmer weather in Pennsylvania than here, and my Philadelphia newspaper says it has been warmer at New York than here. We have as kind neighbours as ever honoured a neighbourhood; some of them have endeared themselves to us, beyond what you could imagine. I speak advisedly when I say, a man can fix himself here better for $1000 than he can for $10,000 in Pennsylvania. Two gentlemen, one from near Lancaster and one from Franklin county, were here to see the place, through a letter I wrote to the Rev. M. B.—they all like the place very much, and wonder why I should be the first discoverer; one of them was looking at a place of 600 acres, price $4000; he told me while looking at the land, that he could sell his place of 120 acres, before he got home for $131 per acre, $15,720, and he was sure if he was a young man, in seven years he could make the place here as good as his own; only look at that! he is a man of intelligence, and owns one of the best farms in Lancaster county, and was attracted here by M. B. sending to him a paragraph of my letter. Why sir, there are inexhaustible marl beds here, that on analyzation contain 97 per cent. pure lime. Pequa lime, Chester county, Pa., contains 20 per cent. magnesia, a very deleterious article in agriculture. I have seen the western part of Pennsylvania and Virginia, and the eastern part of Ohio, and have read and heard much of other parts, and am free to say, there is none equal to this. One Pennsylvanian has already bought 1300 acres here for $2,600, and is to move here in October; he is now on his way, and stopping in your city at present. I have built myself a small house, cleared some of the land near it, and planted some corn, oats, vines, &c.; much of it had a stump, or perhaps two, to every square yard, and it was almost impossible to scratch up the soil; the soil is far beyond anything I could expect, beans and field-peas excellent, pumpkins not good, potatoes tolerable, oats poor; you can hire a man, horse and cart, to haul for about thirty cents a day. Hay, there is none in the county; blades sell for seventy-five cents per hundred. In fact there is no such place in the United States, where the Supreme Being has done so much and man so little. Slavery or something has paralized every nerve, and the choicest blessings are overlooked and unappreciated; some have marl lying on the top of the ground, which is about equal to a heap of dung and one of lime, inexhaustible in their nature, and will not use it, because those who do use it, make use of a great deal of dung; and say they, if marl is what it is said to be, why do they use dung. There are some great bargains in land offered here, such as would astonish the most sceptical; the people here are aware of their deficiency in farming, and are anxious for Northern men to settle among them; continual applications are made to me to sell land for them; there is an apple-still in blast now on about every other farm, most of them are without shelter; they set up attending to them all night; they are fifty years behind the age; in proof of this they count their money in shillings and pence, think there is no hospitality without spirits; big-hill their corn, as was done when I was a boy; they are igno-

rant of any of the facilities of bettering the condition of mankind; as their fathers did, so do they."—*American Farmer.*

For the Farmers' Cabinet.

Progression in Farming.

To the Editor,—We do not perhaps hear so much said now-a-days against *book farming*, as we did a few years ago. I am inclined to think, however, that we yet hardly appreciate to their full extent, the labours of the enquirer into agricultural science. If we would save labour—and who has more need to do that in his operations than the farmer?—we must avail ourselves of all the light which the experience, and even the speculations of others, can throw upon the means of accomplishing our object. There is so much good sense in the following remarks, which I find in the *New York Journal of Commerce*, that I conclude the readers of the Cabinet may not altogether escape profit by looking them over. It is therefore that I send them. O.

"Farming, like all other things, and perhaps more than other things, is in a revolution. We once knew as much about growing corn, potatoes, and grass, as our farming neighbours; but we have glanced at enough of the science in its modern improvements, to feel that all we knew is of very little worth, and that in attempting to write about farming now, we are more likely to get laughed at than admired. But no matter, farming has become a science. If a farmer wishes to grow wheat on his land, he sends wheat to a chemist to be analyzed, that he may find of what it is composed, or rather looks into some modern work on chemistry, and reads it there. He then sends a sample of earth from his lot to the chemist, to ascertain of what ingredients the soil is composed; and whatever of the component parts suited for wheat is not found in it, he procures and spreads upon his land. A field may have in abundance all the ingredients for the production of wheat but one, and yet not be able to produce wheat. By science, the Grahams have discovered the appalling fact, that butter and beef are in the grass and the fruits; that the cow is only the manufacturer; and that she, like the transmuting priest, abjures butter and beef, and yet eats butter and beef all the while. The farmer who has no science, will perhaps, at great cost, add those ingredients of which there are already enough; but that will not cause a crop to grow. This accounts for the fact which is often so surprising, that manure which has produced great crops on one soil, has no good effect at all on another. A scientific farmer knows little of *poor* land. All land is good to him, for it will produce well if only furnished with the proper ingredients. So land that would only produce a very poor crop, has been made to produce a very large crop, by spreading upon it one or two deficient ingredients. These ingredients are, some of them, to be found in almost all substances: lime of oyster shells, ashes even of anthracite coal, charcoal dust, fish, bones, &c. Everything is composed of ingredients which must be had for the reproduction of itself, and many other things. Fruit trees cease to bear often, because they have exhausted the soil of one or two of the ingredients which compose their fruit. Give them but these, and they will at once return to production. A pear tree may grow in a soil which has not all the qualities necessary to constitute pears, and it can no more make pears without the necessary ingredients, than the Israelites could make bricks without straw. One crop exhausts one set of ingredients, and another to some extent a different set; and so farmers learn the fact without knowing the cause perhaps, that the same crop should not be grown for successive years on the same land. Yet there is no difficulty in growing the same crop interminably, if only the exhausted ingredients are supplied.

"A great deal has been learned about the mode and time of cutting and curing hay and grain. Grass, which while lying out to be thoroughly dried, perhaps may get repeatedly wet, makes much better hay if, with much less drying, it is preserved with a bushel of salt to a ton. Salt is often cheaper than hay, so that the farmer makes a profit by putting it in, while the labour of curing is much diminished, and the good qualities of the hay much increased. Wheat cut in the milk has been found to weigh more pounds to the bushel than when left to ripen to the usual time, and oats were still more increased in weight. So farmers have perhaps been suffering great loss for ages, by cutting their grain at too late a stage of its progress.

"The application of science to agriculture has developed wonders in the capabilities of the ground, which have lain from the creation unobserved. Men are astonished when they see what boundless blessings the Creator has spread thick around, and how slow the race has been in observing them. They have spent century after century in shedding each other's blood, in creating and spreading poisonous superstitions, and in every possible way destroying all that was good. Despis-

ing the blessings of creation and Providence, they have sought their happiness in the employments of fiends; and if the malice of men could but have had its way, the race would long since have been extinct, and the earth would have rolled on to the end of her course, her treasures unexplored and useless. Science shows us that the capacities of the earth have hardly begun to be developed, and the human family hardly begun to exist, either in numbers or individual enjoyment. Evidently no sort of conception has been formed in the minds of more than a very few, of the swarming millions which this earth is capable of sustaining in luxurious plenty. Land and labour have been brought so ignorantly together, that nothing almost has been the product. The meagre stinted crops which have so poorly repaid the labours of the farmer, have exhibited the measure of man's ignorance rather than of earth's barrenness. We are opening now upon an era, when every field will be a scientific laboratory, most interesting in its operations to every noble feeling. The change will operate to compensate the farmers near the great markets, for the competition they endure from the cheapness of Western land. In proportion as the quantity of crops is increased, the value of proximity to market is increased. If the crop of wheat were doubled per acre, the expense of transportation per acre would be doubled, and this would go to enhance the value of land near to market, to the amount of the capital upon which this saving would pay the interest. But when we come to fruits and vegetables, which decay rapidly, or are injured by much travelling, or are of great bulk, compared with their value, then we have another element of value for land near to markets.

"We are indebted for the most of these suggestions to Mr. Pell, whose fruits, vegetables and grains, attracted much attention at the late Fair, and now constitute a museum at the store of Mr. J. B. Murray, No. 25 Old Slip. We do not however mean to make Mr. Pell responsible for any blunders which we have committed, in repeating from memory a little outline of the very interesting conversation of half an hour which we had with him. We do not suppose these things are as new or interesting to every body as they were to us; but they will perhaps set some of our readers upon a track that will bring them to more thorough and exact information."

In London there are markets for the exclusive sale of poultry and game; in Dublin, there is one wholly devoted to that of eggs.

For the Farmers' Cabinet.

Fine Crops of Corn.

Mr. Editor,—Having a little leisure, I concluded to employ it in giving you an account of the corn crop grown this season on the farm of the brothers Samuel J., Ebenezer J., and David D. Dickey.

Field No. 1, containing eight acres and one hundred and forty-two perches, produced 1037 bushels of corn, averaging 116 bushels and 21 quarts to the acre. Field No. 2, containing fourteen acres, three roods and thirty perches, produced 1145 bushels, averaging over 76 bushels to the acre. No. 3, contains sixteen acres and fifty-six perches, and produced 1,110 bushels, averaging over 68 bushels to the acre; making in all 3,292 bushels of shelled corn on forty acres and twenty-eight perches, averaging 82 bushels to the acre. Lest some persons should think there was some guess work about measuring either the field or the corn, it may be proper to state, that the person who surveyed the ground, has been qualified to the measurement of the same; one person measured all the corn on field No. 1, and has been qualified to the accuracy of his account: as also the persons who measured the corn on fields Nos. 2 and 3, are willing to be qualified to the accuracy of their accounts.

I will now state the manner in which the corn was planted, worked, and manured. Seven acres of field No. 1, had sixteen cart loads of manure to the acre, of rough manure from the barn-yard spread on the sod, and ploughed in about seven inches deep, with the Prouty plough. I do consider it very important that the ploughing should be well done, that all the ground should be turned up, and to a good depth, for any crop, but more particularly for corn. The ground was then rolled with a heavy roller, and harrowed over once with a spike-tooth harrow; it then got two strokes with a large cultivator, about five feet wide, with nine teeth in it, similar to the teeth in the small cultivators. I value this implement very highly, and it is one I think no farmer should be without; it pulverizes the ground, and leaves it in a better state for planting than any other harrow that I have seen in use. I always harrow the ground well before planting corn, as it can be done more effectually and at less expense than at any other time. There were then spread on five acres of the field 15 bushels of crushed bones to the acre, and 30 bushels of ashes on the balance of the field, with the exception of about an eighth of an acre, that had neither bonedust nor ashes. It might be well to state here, that judging from that part of

the field that had neither bonedust nor ashes, there was no perceptible difference in the corn at any time in the season; nor do I believe that the crop was increased five bushels to the acre, by either of the above mentioned manures; but on the two acres that had no barn-yard manure, there was a shade of difference, and the corn was not quite so good there, as upon the rest of the field. The roller was then put to work again, and followed with the corn-drill, which, by the way, is the manner we plant all our corn, and I am satisfied that more corn can be raised planted in this way, than by planting in hills. I was induced to try this way of planting corn some eight or nine years ago, on account of having a field that was very hilly, and wishing to put it in corn, and being unable to work it more than one way, I concluded to drill it in by hand; but after planting one or two rows, I found it rather a slow way of doing business. I set to work, and knocked together a kind of machine for dropping, which answered the purpose very well, the ground having been marked out with a plough previously. When we came to take off the crop in the fall, I found that we had so much more corn than usual, from the same number of acres, that I concluded I would make a drill that would perform the whole operation of marking, dropping, and covering, which, from some little alteration made on it since, does its work about right; one man and a good horse will plant about eight acres a day with the drill. On field No. 1, the corn was planted in rows, three feet nine inches by six inches, and thinned out after it came up to about one foot. After the corn comes up, we go over it twice generally, with the large cultivator, taking out the middle and two front teeth, and in this way doing double duty; and when the corn gets large enough we pass through it twice with the small cultivator, never, in any case, allowing a plough to go in it after the ground is ploughed. Fields Nos. 2 and 3, were drilled in, four feet by twelve or fourteen inches, and worked in the same way, with the exception, that no manure of any kind was put on either of them.

E. J. Dickey.

Hopewell, Chester co., Pa., Dec. 8th, 1846.

The above statement showing a yield of nearly 3,300 bushels on 40 acres, gives a very favourable specimen of Chester county corn raising. It is a highly interesting account, and should stimulate all of us who hold the plough to aim at similar results. We hope the leisure spoken of by our friend in his private note, will be found, and that his promised communication will be forthcoming.—Ed.

An Important Decision.

We make the following extract from the opinion of the *Hon. Ellis Lewis*, given in a recent important case, brought before the Court of Quarter Sessions in this County, (of which he is the presiding Judge.)

A man by the name of John Lutz, had leased lands of Henry Hildebeitler. After the expiration of the lease, a dispute arose between them as to which was entitled to the straw of the "way-going crop." Hildebeitler insisted that the straw belonged to him, and that it should remain on the premises for the purpose of enriching the land—while the other as strenuously contended that half of it rightfully belonged to him, as well as the grain crop, and was about carrying the grain, in the sheaf, from the premises. Resistance was made to this; and the result was a prosecution against Lutz for assault and battery.

In giving the charge of the Court, Judge Lewis made the following remarks,—for which we are indebted to the *Union & Tribune*.

"The moment the relation of landlord and tenant is created by the parties, the law enters into the contract and forms part and parcel of it, and the rights and duties of each are established by law, without any express stipulation in the contract. It requires no provision in the lease to bind the tenant to keep the premises in repair, to prevent waste, and *to farm the land in a husbandlike manner*. These are obligations implied by law, and growing out of the relationship of the parties. Nothing short of an express contract can relieve the tenant from the performance of these, the necessary duties of his tenure. The principles of good husbandry require that the straw raised upon the premises should be returned to the land with the accumulations arising from the stock kept on the farm. This is the general custom of the State. It has existed from the earliest settlement of the country. No two intelligent farmers, acquainted with the business of agriculture will differ in opinion on the subject. Any other course will impoverish the land and thus operate injudiciously to the tenant—to the landlord—and to the general interests of the community. It is no answer to say that lime, and other means of enriching the soil, may be procured. These are well enough in *aid* of the natural sustenance of the land, but they are not regarded as a *substitute* for it. There may be cases where the owner may find it to his advantage to exchange straw for manure, or for the means of purchasing it. But these are exceptions to the general course of husbandry. The interests of agriculture, the custom of

the state, the principles of good husbandry, and, as I believe, the law of the state is against the removal of the straw from the premises, unless the tenant has secured this privilege by the express provisions of his contract. Entertaining this opinion, and believing that the decision in Craig vs. Dale will not be adhered to by the Supreme court, I cannot advise that this defendant should be convicted of a crime, for no other offence than the moderate assertion of what nine-tenths of the farming community believe to be his right—a right sanctioned by custom—maintained by good husbandry—and which nothing but ignorance or infidelity in the tenant would induce him to dispute." *Lancaster County Farmer.*

Extension of Knowledge.

At his opening lecture at Guy's Hospital, London, in 1813, William Allen made the following remarks:

"The circumstances in which we are placed in the present state of our existence, prove it was the intention of the Supreme Being that we should be actively employed; every thing about us is in motion; important changes are constantly going on, and some of them, by their very nature, are calculated to stimulate mankind to exertion. This change is impressed upon our garments which are continually wearing out—upon the habitations which protect us from the weather, which are constantly requiring repair; it is obvious on the very face of nature, and proclaimed in the succession of seasons; it seems to be a law of our being, that whatever is capable of fixing our attention to useful pursuits—whatever stimulates to the exertion of intellect—whatever gives spring and activity to the powers of the mind, must, if properly directed, conduce to the happiness of man. Surrounded as we are by the comforts and conveniences of civilized life; born in an age wherein the useful arts are carried to a high degree of perfection,—it requires some abstraction of mind, and a certain degree of reflection, to appreciate properly the advantages we enjoy. We are apt to consider the situations in which we find ourselves, as perfectly natural, and have but a faint idea of what we owe to the labours and exertions of those who have gone before us; without their labour and skill, however, we might yet have been obliged to clothe ourselves in the skins of beasts,—to seek refuge from the vicissitudes of the weather in the caves of the earth, and feed upon any digestible substance that might be thrown in our way.

The influence of knowledge upon the human mind is prodigious. A reference to the page of history will not only show the gradual advances which have been made from rude beginnings to the present improved state of society, but it will strongly inculcate the important lesson, that the happiness of our species is intimately connected with the diffusion of knowledge. Where do we behold cruelty in its most terrific form, but in the uninstructed and neglected part of the community? by whom are our jails principally inhabited, but by the ignorant?—by those to whom society has failed in its duty. In the higher ranks of men, ignorance assumes not unfrequently the shape of bigotry, and manifests itself in deep-rooted prejudice: whenever you see a man more than ordinarily censorious of others, indisposed to make allowance for the circumstances in which they may have been placed, positive and uncharitable in his opinions, whatever may be his rank in life, be assured that he is lamentably ignorant.

Knowledge, properly understood and applied, sheds a benevolent influence over the mind of the possessor; and when we consider that it tends to increase our powers of usefulness, and thereby to add to our own happiness and that of others, we shall feel it almost a duty to make such an arrangement of our time, as to devote regularly a portion of it to the improvement of our minds.

Of all the varied branches of knowledge, those relating to material objects are most important. In former ages the powers of the human mind were exhausted in useless metaphysical disquisitions concerning essence and substance, and ethereal forms,—things which it was impossible to comprehend or apply to any good purpose. To our illustrious countrymen, however, Bacon, Locke, Newton, Boyle and Hook, we are indebted for a more rational system of philosophy; rejecting idle speculations, they directed their attention to watch the processes of nature, and to attempt to discover some of the laws by which her operations are governed; they built upon facts and experiments, and the progress since made in every department of science, has proved the correctness of their views.

Few are sufficiently aware of the beneficial consequences likely to result from an endeavour to induce a habit of attention even to minute circumstances, and how much misery is produced in the world by those unhappy prejudices, which owe their origin to a careless and superficial view of facts. Men who have not been in the habit of thinking, and carefully investigating the grounds of their opinions, are most of all

liable to be carried away by their passions. The influence of the habit which I now recommend, on the comfort of society, is incalculable; the pleasure arising from the cultivation of our rational powers, would amply repay the efforts necessary for the purpose: indeed, it is only by an accurate examination of things, and reflection upon them, that we learn the comparative value of the different objects presented to our notice, and give to every one that precise degree of attention to which it is, by its nature, entitled."—*Life of William Allen.*

Moral Effects of Light.—Dark and sombre dwellings and streets are the well-known resort of the most depraved classes in all cities and towns. This may be said to be a universal law of our social economy, and hence it becomes a matter of some importance to consider whether it would not be advisable, on moral grounds also, to attend with greater care to the construction and improvment of the residences of our labouring population. Darkness produces carelessness and depression of mind, and of the whole nervous system, especially if it be conjoined with idleness, its almost necessary companion. A dark house is generally a dirty house; and it is in dark corners that the poor accumulate filth, which they are too idle to throw out of doors. If such dwellings were exposed to the light of day, a sense of shame would often induce a superior degree of cleanliness; and the cheerfulness of mind which a light house tends to foster would be productive of still greater advantages. Mr. Clay in his Report on Preston, has well said, that "something may be hoped for a people who can feel 'a joy in flowers;'" but the poor can seldom posses even this small advantage in the miserable residences provided for them.—*Liverpool Health of Towns' Advocate.*

Currants may be forced by placing them in any forcing department in the first or second month. They will ripen in the last spring months.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Twelfth Month, 1846.

In a private letter from T. Wm. Harris, of Cambridge, Mass., dated the 19th ult., after alluding to the various and extended efforts he has made to perfect for a new edition, his "Treatise on Insects Injurious to Vegetation," he says, "There are still several insects which I am desirous of obtaining; and among them, the *wire-worm* and the beetle that produces it, both of which, according to the late W. Gaylord, Esq., are found in the Middle States. It may be, that they are identical with a species found here, and this it is desirable to ascertain."

We make this note in order to call attention to the matter, and to solicit those whose situation and pursuits give them the power, to lend their aid to this distinguished naturalist, in his highly interesting pursuit.

Fitzgerald's newly invented Threshing Machine was mentioned in our last number, as having been visited by the Editor. Since that time we have seen it in motion, and it certainly made a very favourable impression as to the efficiency of its operations. It threshed with great rapidity, and did the work well. The grains were unbroken. A sheaf of wheat was thrown in the water and then passed under the beaters. It was out in a twinkling, with perhaps every grain separated from the straw.

☞ SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoe Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

M. S. POWELL.

Philad., Feb., 1846. tf.

Agency for the Purchase & Sale of

IMPROVED BREEDS OF CATTLE & SHEEP.

The subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

FOR SALE,

A BEAUTIFUL FARM,

Nearly adjoining the city of Annapolis, Maryland, containing 350 acres of land, naturally of good quality, and during the last four years, I have had it highly improved with clover, plaster, ashes, lime, and other manures to the amount of upwards of fifteen hundred dollars. The fences and buildings are all in good repair, and divided into ten departments, including one peach orchard, containing upwards of 1500 trees, in fine health of three summers' growth, and an apple orchard in full bearing. About 150 acres of this land are covered with the best sort of building timber.

I have a good wharf, where a large schooner can lie and receive or deliver produce. This farm is very pleasantly situated, high and dry, and about rolling enough to cast off extra rain water,—also has good spring water in several of the fields. The buildings consist of a good dwelling, nearly new, two brick servant houses, one house for the manager, two large tobacco houses, 30 by 70 feet each, one is used for a barn; stabling, corn, milk, and hen houses. From the above dwelling I can go to the Annapolis market in about fifteen minutes, where we have a tolerably good market for hay, peaches, sweet potatoes, milk and butter. Of milk about $2000 worth may be sold annually. Freight is cheap to Baltimore, which is an excellent market, with which we have daily intercourse, both by steam and otherwise. But few farms have the same opportunities of doing business to profit, being now in good order to make money, and only on account of advanced age, infirmities, and residing at a distance, am I induced to part with it. It will be sold cheap. Persons desirous of seeing the place, will please call on me, near Baltimore, Md., and I will go and show it.

ROBERT SINCLAIR, Nurseryman.

August 28th.—4t.

FOR SALE,

AT D. O. PROUTY'S

AGRICULTURAL WAREHOUSE,

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from $1 50 to $50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for $14 to $18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

September 15th—tf.

The quantity of rain which fell in the 11th month, 1846, was nearly eight inches. ..... 7.97 in.

Penn. Hospital, 12th mo. 1st.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES.
Successor to George M. Coates.

Sept. 15th, 1846.

PHILADELPHIA

AGRICULTURAL WAREHOUSE,

No. 291 Market Street, North side, between Seventh and Eighth Streets, Philadelphia.

The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpening Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 15th, 1846. 1 yr.

NEW

Horticultural and Agricultural Ware-house,

84 Chesnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Sweede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y. R. BUIST.

COAL.

The subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish *at the usual cash prices*, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Tenth month 15th, 1846.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31¼
BUISTS' ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

☞ We are prepared to bind books to order.

GUANO.

Twenty-five tons first quality Ichaboe Guano, in bags or barrels, for sale in lots to suit purchasers, by

S. & J. J. ALLEN & CO.,
No. 7 South Wharves, 2nd Oil Store below Market street, Philadelphia.

October 15th, 1845. tf.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, for seven barrels or more, $1 75 per barrel, containing four bushels each. Any number of barrels less than seven, $2 each, or thirty-five cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for wheat.

JOSIAH TATUM.

CONTENTS OF THIS NUMBER.

	Page
Soiling, or House-feeding,	137
A Simple Method of Protection from Lightning.—A Word to Boys,	142
Observations on the Potatoe disease.—The Alpaca,	143
Irrigation,	145
Starch Manufacture.—Cultivation of Fruit Trees,	147
Demands for American produce.—Cows,	148
Transplanting large trees.—Deep ploughing,	149
Fattening Hogs,	150
Deleterious effects of Brick yards,	151
Carefulness in living.—What is Blight?	152
Cheese Making in Virginia,	153
Canker-worm Moth.—Lands in Virginia,	154
Potatoe Blight.—Ag. Soc. of Prince George Co., Md.	155
Artesian Well.—Improvement in Nail Making.—Advice to Young Men,	158
Crops in Scotland,	159
Farmers' Tools.—Go forth into the Country,	160
Virginia Lands,	161
Progression in Farming,	162
Fine Crops of Corn,	163
An Important Decision,	164
Extension of Knowledge,	165
Moral effects of Light.—Editorial Notices,	166

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Joseph Rakestraw, Printer.